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AUG 26 1894

U. S. DEPARTMENT OF AGRICULTURE

VOL. XVIII. NO. 22

NOV. 15, 1890.

Zimmerman &
McClubb
Medina, Ohio

PEACE ON EARTH
GOOD WILL TOWARD MEN

CLEANING
IN

BEE CULTURE

DEVOTED
TO
THE

& HOME INTERESTS.

MEDINA OHIO
BY
A. T. BOOT

TERMS, ONE DOLLAR PER YEAR.

ENTERED AT THE POSTOFFICE, MEDINA, OHIO, AS SECOND-CLASS MATTER

OVER 10 PER CENT ADVANCE IN PRICE AFTER DEC. 20, 1890.

GALVANIZED WIRE Poultry Netting and Fencing.

The Best Quality on the Market, at Prices as Low as the Lowest.

This shows ACTUAL SIZE mesh of 2-inch No. 19 netting, the kind commonly used for poultry fence. Cut shows the wire a little heavier than actual size.

A 16-page illustrated catalogue of netting and fencing will be mailed free on application. This gives cut and prices of the different sizes, and explains how used.

ALL "G. & B." NETTING
2-in. mesh No. 19, and 2-in. No. 18
IS WOVEN WITH
Three-Strand Twisted Selvages,
Thus being rendered much
STRONGER THAN ALL OTHER BRANDS
which have only two-strand selvages. It is also full standard gauge, while some netting in the market is made of No. 19½, and branded 19.

All the netting and fencing sold by us is of the celebrated "G. & B." brand. We guarantee this to be the best in the market, and our prices as low as the lowest. Dealers will do well to write for prices before ordering elsewhere.

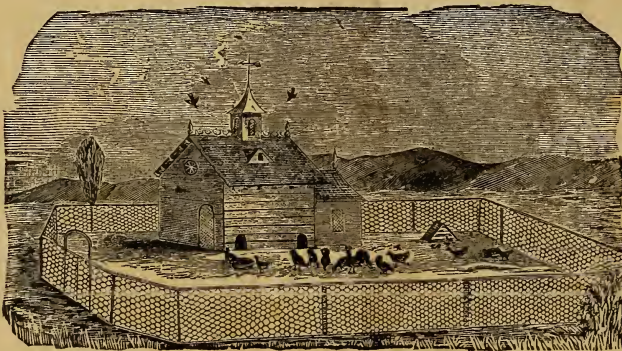
A FEW OF ITS MANY ADVANTAGES.

It is the cheapest, costing less than 75 cts. per rod for posts, staples, and all. It will last a lifetime, and never needs repairing, because it can't get out of order. Being galvanized after it is woven, it will never rust.

It is easily put up and taken down. Ernest has a roll fastened to light stakes, which he has taken down and set up again in a different location in 15 minutes when the ground was soft. It can not be

if you choose. This will prevent small chickens from getting through, and makes the fence one foot higher. If you want to make division fences, so as to keep different breeds from the same yard, it is better to have a board at the bottom at least one foot wide, so the fowls can not be gossiping through the wire, and pecking at one another. You will notice that one roll makes a yard nearly 40 feet square, and this is plenty large enough for 20 or 30 fowls.

COTTAGE LAWN AND GARDEN FENCING makes the most attractive and best fence. The **WORLD'S WEB-WIRE FENCING** (4-in. mesh) makes the best farm fence. Both are inexpensive. See catalog mentioned above for description and price.



blown down, as the wind goes right through it. On this account you don't need very heavy posts where the fence is used for poultry only. It does not keep out the light and fresh air, so needful to poultry. It is neat and ornamental, and always looks well if properly put up. It is so invisible that fowls can not see the top, and will not fly over. You can see inside as well as if there were no fence at all.

HOW TO PUT IT UP.

About one pound of staples is needed for a roll of netting. The posts to hold it should not be more than 10 feet apart, and they should be set in the ground at least 2 ft. for a permanent fence. In putting it on the posts, draw the top selvaige tight, and fasten securely with the staples, and afterward draw the bottom down and fasten that. You can put a board a foot wide along the bottom,

This netting is made with 2, 1½, 1, and ¾ in. mesh, of different-sized wire, and from 6 inches to 6 feet wide, and is put up in bales 150 feet long. That most used for poultry fences is 2-inch mesh, No. 19 wire, 4 feet wide, 150 feet long. This makes 600 sq. feet in a bale.

Three years ago we sold 2-in. No. 19 netting, 4 ft. wide for \$6.00 per roll. Next year the price was \$5.00. Last year \$4.50; this year \$4.00: 5-roll lots, \$3.75; 10-roll lots, \$3.60. For 20 or more rolls write for special prices. While the prices have been coming down the quality has been going up so that the G. & B. brand of netting is now the best made. See cut above. Note the following table of prices, which are good only till Dec. 20, 1890. After that date add 50c per roll.

TWO-INCH MESH, NO. 19 WIRE, ANY WIDTH.

Less than a full bale, or any fraction of a bale, 1½c per sq. ft. One bale, at 66½ cts. per 100 sq. ft., or \$4.00 per roll, 4 ft. wide. If one bale is shipped from New York or Chicago add 25 cts. for cartage. More than one bale will be delivered free on board New York or Chicago.

5 to 10 bales, at 62½ cts. per 100 sq. ft., or 3.75 per roll, 4 ft. wide.

10 to 20 " " 60 " " 3.60 " " "

We ship from New York, Chicago, or from here, with other goods. If you order netting alone it will usually go for less freight charges from New York or Chicago, because rates can be obtained from those points when they can not from here. We keep in stock only the 2-in., No. 19 wire, 4 ft. wide, and all other widths, weights, etc., will have to go from one of the two other places mentioned.

Three-fourths-inch galvanized staples, for putting up the netting, 20 cts. per lb. It takes 1 lb. per roll.

A. I. ROOT, Medina, Ohio.

FACTS! FACTS! FACTS!

The Bee-Keepers' Directory, 125 pages, price \$1 00. Thirty Years Among the Bees, 82 pages, price 50 cts. The Am. Apiculturist, one year, price 75 cts. The above paper and books contain all the information necessary to produce honey by tons, and to rear queens by thousands. All mailed for \$1.25. Address

HENRY ALLEY, Wenham, Mass.

Bee - Keepers' * Supplies.

We are prepared to furnish bee-keepers with supplies promptly and at lowest rates. Estimates gladly furnished, and correspondence solicited. Our goods are all first class in quality and workmanship. Catalogue sent free. Reference, First National Bank, Sterling, Ill. Address

WM. McCUNE & CO.,
Sterling, Illinois.

In responding to this advertisement mention GLEANINGS.

THE BEST HOLIDAY GIFT	A MUSICAL INSTRUMENT
SEND FOR CATALOGUE AND PRICE LIST.	MURRAY & HEISS CLEVELAND, O. DEALERS IN MUSICAL GOODS.

In responding to this advertisement mention GLEANINGS.

NEW * FACTORY.

Bee-Hives, Sections, Frames, Etc.

We have moved into our new factory, which is the largest and most complete in the world. We make the best of goods, and sell them at lowest prices. Write for free illustrated catalogue.

G. B. LEWIS & CO.,
WATERTOWN, WIS.

17-tfdb

In responding to this advertisement mention GLEANINGS.

FOR LIGHT AND DARK FERRETS,

and pure Poland-China Swine, address

N. A. KNAPP,
Rochester, Lorain Co., O.

In responding to this advertisement mention GLEANINGS.

EUREKA FRAME MACHINE.

Something every bee-keeper should have.
For price and particulars address

24-23db

F. W. LAMM,
Box 106, Somerville, Butler Co., O.

Please mention this paper.

24-23db

"HANDLING BEES." Price 8 Cts.

A chapter from "The Hive and Honey Bee, Revised," treating of taming and handling bees; just the thing for beginners. Circular, with advice to beginners, samples of foundation, etc., free.

5tfdb

CHAS. DADANT & SON,
Hamilton, Hancock Co., Illinois.

In responding to this advertisement mention GLEANINGS.

SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap.

6tfdb

NOVELTY CO.,
Rock Falls, Illinois.

Please mention this paper.

FOR SALE.—A pleasant home in Orlando; the most enterprising town in South Florida. New, nine-room house; half-acre lot planted in bearing orange-trees; a nice lawn; city water; on street car line; but only ten minutes walk from business part of town. Splendid location for an apiary. For particulars address

DR. E. J. BAIRD,
Orlando, Florida.

21-22-23d

In responding to this advertisement mention GLEANINGS.

BEST ON EARTH



ELEVEN YEARS
WITHOUT A
PARALLEL AND
THE STAND-
ARD IN EVERY
CIVILIZED
COUNTRY.



Bingham & Hetherington
Patent Uncapping-Knife,
Standard Size.

Bingham's Patent Smokers,

Six Sizes and Prices.

Doctor Smoker,	3 1/2 in.,	postpaid ...	\$2.00
Conqueror	3 "	"	1.75
Large	2 1/2 "	"	1.50
Extra (wide shield)	2 "	"	1.25
Plain (narrow)	2 "	"	1.00
Little Wonder,	1 1/2 "	"	.65
Uncapping Knife.....			1.15

Sent promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Milledgeville, Ill., March 8, 1890.

SIRS:—Smokers received to-day, and count correctly. Am ready for orders. If others feel as I do your trade will boom. Truly, F. A. SNELL.

Vermillion, S. Dak., Feb. 17, 1890.

SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly, R. A. MORGAN.

Sarahsville, Ohio, March 12, 1890.

SIRS:—The smoker I have has done good service since 1883. Yours truly, DANIEL BROTHERS.

Send for descriptive circular and testimonials to

17fdb BINGHAM & HETHERINGTON, Abronia, Mich.

In responding to this advertisement mention GLEANINGS.

DADANT'S FOUNDATION

Is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; O. G. Collier, Fairbury, Neb.; G. L. Tinker, New Philadelphia, O.; E. Kretchmer, Red Oak, Ia.; P. L. Vialon, Bayou Goula, La.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wisconsin; J. Mattoon, Atwater, Ohio; Oliver Foster, Mt. Vernon, Iowa; C. Hertel, Freeburg, Illinois; Geo. E. Hilton, Fremont, Mich.; J. M. Clark & Co., 1517 Blake St., Denver, Colo.; Goodell & Woodworth Mfg. Co., Rock Falls, Ill.; E. L. Gould & Co., Brantford, Ont., Can.; R. H. Schmidt & Co., New London, Wis.; J. Stauffer & Sons, Nappanee, Ind.; Berlin Fruit-Box Co., Berlin Heights, O.; E. R. Newcomb, Pleasant Valley, N. Y.; L. Hanssen, Davenport, Ia.; C. Theilmann, Theilmanton, Minn.; G. K. Hubbard, Fort Wayne, Ind.; T. H. Strickler, Solomon City, Kan.; E. C. Eaglesfield, Berlin, Wis.; Walter S. Pouder, Indianapolis, Ind., and numerous other dealers.

LANGSTROTH on the HONEY-BEE, REVISED.

The Book for Beginners, the Most Complete Text-Book on the Subject in the English Language.

Bee-veils of Imported Material, Smokers, Sections, Etc.

Circular with advice to beginners, samples of foundation, etc., free. Send your address on a postal to

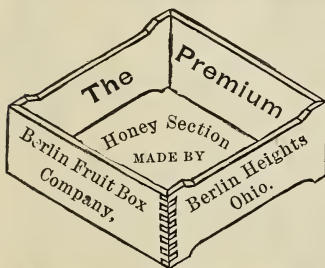
4tfdb

CHAS. DADANT & SON,
HAMILTON, HANCOCK CO., ILLINOIS.

In responding to this advertisement mention GLEANINGS.

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In responding to this advertisement mention GLEANINGS.

DO YOU WANT

To succeed in apiculture? Then try the Nonpareil Bee Hive and Winter Case. Send for catalogue of prices, and inclose 25 cts. in stamps for the new book, "Bee-Keeping for Profit," and you will not regret it. Address

DR. C. L. TINKER,
New Philadelphia, O.

21td

In responding to this advertisement mention GLEANINGS.

AMERICAN BEE JOURNAL

32 pages—\$1.00 a year—Sample Free.

The oldest, largest and cheapest Weekly bee-paper

THOMAS G. NEWMAN & SON,

246 East Madison Street, CHICAGO, ILL.

In responding to this advertisement mention GLEANINGS.

THE MAYFLOWER,

16-Page Monthly; devoted to flowers; pub. by John Lewis Childs; with 5 Choice Winter Flowering Bulbs, no 2 alike. Also **Special Crops**, pub. by C. M. Goodspeed, and a package of Choice Mixed Pansy Seed, all for 25 cts. Remember, both papers a full year and premiums postpaid. Offer good only until Nov. 24. Address

SPECIAL CROPS, Skaneateles, N. Y.

In responding to this advertisement mention GLEANINGS.

TAKE NOTICE!

BEFORE placing your orders for SUPPLIES, write for prices on One-Piece Basswood Sections, Bee-Hives, Shipping-Crates, Frames, Foundation, Smokers, etc. PAGE, KEITH & SCHMIDT CO.,
21-121b New London, Wis.

In responding to this advertisement mention GLEANINGS.

FOR SALE.

100 Colonies of Italian and Hybrid Bees

In two-story Simplicity hives (ten frames) chock full of bees, and plenty of honey for winter, wide frames, T supers; with sections and starters in upper story, complete, for \$1.50 per colony, or offers.

ALBERT ARNOLD.

Newark, Independence Co., Ark.

In responding to this advertisement mention GLEANINGS.

Job Lot of Wire Netting.

CUT PIECES AT A LOWER PRICE THAN FULL ROLLS.

Having bought from the factory, at our own price, five or six hundred remnants, as listed below, we are able to give you the choice of a great variety of pieces at the price of a full roll or lower. Full rolls of netting are 150 ft. long, and when they are cut we have to charge nearly double the full-roll rate, because it is so much trouble to unroll, measure, and cut, and run the risk of having a lot of remnants on hand. No doubt it is in this way that the following remnants have accumulated. It costs a good deal to get all this in shape so we can easily pick out from the lot the piece you want. But to move it off quickly, we put the price down so you can all have a chance at it. Remember, first come, first served. In ordering, therefore, name a second or third choice, or say that we may send the nearest we can if the piece selected is gone. On 5 pieces deduct 5 per cent, on 10 pieces 10 per cent. On all orders sent before Jan. 1, 1891, deduct 10 per cent. These remnants are shipped only from here. If any of you want to secure some, and don't want them shipped till later, when you will order something else, so as to save freight, pick out the pieces you want, send remittance with the order, with request to lay by till called for, and we will mark them as belonging to you. We prefer to ship them right out, however.

LIST OF POULTRY-NETTING REMNANTS.

Width in In. s.	Size of Mesh.	No. of Wires.	Obs. p'r Sq. Ft.	Length of each piece. Multiply by the width in feet to get the number of square feet in each piece.
12	2	19	3/4	107, 68, 50, 48, 47, 33, 30, 20.
18	2	19	3/4	143, 69, 50, 50, 41, 34, 28, 24.
24	2	19	3/4	138, 80, 80, 75, 75, 71, 59, 50, 50, 50, 50, 47, 45, 39, 32.
30	2	19	3/4	86, 65, 56, 43, 42.
36	2	19	3/4	144, 95, 90, 88, 78, 66, 65, 64, 60, 59, 58, 55, 54, 51, 50, 48.
42	2	19	3/4	48, 47, 47, 45, 45, 40, 38, 38, 24, 23, 22, 20, 19, 18, 17.
48	2	19	3/4	145, 107, 103, 100, 82, 80, 80, 71, 70, 65, 60, 57, 55, 52, 49.
54	2	19	3/4	47, 45, 43, 40, 36, 33, 30, 29, 26, 25, 23, 23, 20, 14, 6.
60	2	19	3/4	32, 28.
66	2	19	3/4	82, 67, 48, 44, 42, 42, 38, 32, 30, 34, 21, 20, 11, 9.
72	2	19	3/4	125, 124, 110, 108, 103, 5 of 100, 95, 94, 88, 73, 72, 68, 60, 58, 50, 48, 44, 37, 36, 25, 24, 20, 19.
24	2	18	1	75, 65, 15; 12 in. 43.
36	2	18	1	144, 122, 100, 50, 43, 35, 17; 30 inches wide, 63, 25.
48	2	18	1	105, 100, 99, 44, 41, 39, 29, 23; 42 inches wide, 60.
72	2	18	1	61, 53, 48, 47, 37, 35, 24, 22; 60 in. wide, 67, 20.
36	2	17	1 1/2	73, 42, 15; 24 in. wide, 78.
48	2	17	1 1/2	78, 53, 32; 60 in. wide, 26.
12	2	16	1 1/2	78, 59, 11; 18 in. wide, 72, 72, 40; 24 in. wide, 94, 84.
36	2	16	1 1/2	37, 36, 32, 32, 23, 14; 30 in. wide, 54, 46, 44.
72	2	16	1 1/2	60, 58, 56, 43; 48 in. wide, 70; 60 in. wide, 62.
18	2	15	2	87, 61, 30; 12 in. wide, 100.
24	2	15	2	120, 100, 70, 33, 33, 13, 12.
30	2	15	2	104, 66, 40, 27, 21, 15, 6; 60 in. wide, 48, 20.
36	2	15	2	50, 45, 33, 18, 16, 15, 15, 15, 14, 14, 13, 13, 7, 7.
42	2	15	2	121, 71, 35, 26, 23, 20, 8; 72 in. wide, 50, 36, 33.
48	2	15	2	72, 70, 48, 45, 38, 37, 30, 29, 26, 22, 14.
24	1 1/2	20	1	41; 36 in. wide, 46.
30	1 1/2	20	1	100, 77, 40; 18 in. wide, 14; 42 in. wide, 85, 59.
36	1 1/2	20	1	33, 33, 30, 14; 36 in. wide, 48, 47, 47, 45.
48	1 1/2	20	1	107, 72, 52, 35, 18; 60 in. wide, 56; 72 in. wide, 64, 63, 10.
18	1 1/2	18	1 1/2	63, 24 in. wide, 60; 30 in. wide, 110; 36 in. wide, 7.
48	1 1/2	18	1 1/2	34, 30, 28, 12; 6 in. wide, 105, 34, 19.
30	1 1/2	16	2 1/2	79; 36 in. wide, 14; 42 in. wide, 34; 48 in. wide, 92.
36	1 1/2	20	1 1/2	22, 8.
36	1 1/2	19	1 1/2	48, 24, 12, 10; 12 in. wide, 9; 24 in. wide, 86, 42; 30 in. wide, 75; 48 in. wide, 8.
36	1 1/2	18	2	11, 11, 10; 12 in. wide, 80; 30 in. wide, 6; 34 in. wide, 16; 42 in. wide, 80; 48 in. wide, 22.
24	1	20	1 1/2	38, 28, 20; 12 in. wide, 122; 18 in. wide, 124, 120; 30 in. wide, 96.
48	1	20	1 1/2	100, 53, 25; 36 in. wide, 12, 7; 72 in. wide, 51.
24	1	19	2	63, 28, 11; 9 in. wide, 24; 36 in. wide, 13; 42 in. wide, 50, 34; 48 in. wide, 40; 60 in. wide, 19.
33	1	18	2 1/2	32, 11, 8; 9 in. wide, 32; 24 in. wide, 25; 30 in. wide, 34, 32; 36 in. wide, 37; 48 in. wide, 30; 60 in. wide, 97.
24	3	16	1	46, 19; 36 in. wide, 86; 42 in. wide, 14.
36	3	15	1 1/2	63; 48 in. wide, 69.
24	3	14	1 1/2	151, 18 1/2; 48 in. wide, 45; 72 in. wide, 100, 70.

A. I. ROOT, Medina, O.

SPECIAL NOTICES.

JOB LOT OF WIRE POULTRY-NETTING.

We have just secured from the factory a large lot of remnants and short rolls of wire netting of different sizes of wire and mesh, and of different widths. We offer them at special low prices, and, besides, give 10% off on all orders received before Jan. 1. See the list and terms on another page. These are new goods, and not inferior in any respect to full rolls of new goods. It is a rare chance to get pieces of less than a roll at the same rate as full rolls or less. Remember, you can get full rolls cheaper for the next month than you can later. Wire-netting catalogue mailed on application; also discount sheet, showing prices before Dec. 15 and after.

THE DEMAND FOR HONEY.

The trade in honey still continues brisk with us—so much so that we have ordered two more carloads from the West, which are now on the way, and will probably arrive before December 1. One of these cars comes from J. F. McIntyre, and is a part of his crop of white sage, mentioned in his communication on another page of this issue. Judging from the sample received, it is fully equal to that received from L. E. Mercer & Son. Being in new cans and cases, it will be more desirable on that account. The other car is coming from Phoenix, Ariz., the same place from which we received the first car in August. We will quote prices on this after it arrives, and we can see it and decide on its value. The white sage will be worth the same as quoted before. From one to 5 cans (60 lbs. each), 11c per lb.; 3 or more cases, of 2 cans each, 10c per lb.; 10 or more cases, 9c per lb. We still have on hand over 30 cases of Mercer's honey, with which to fill orders till the new car gets here. Remember, this honey does not candy—a virtue that many consider of great value.

Of the car received from Nevada, we still have 16 cases of extracted alfalfa, very fine flavor and color, but candied.

20 12-lb. cases white comb, 1-lb. sections.

20 24-lb. " " " " "

48 48-lb. " " " " "

27 64-lb. " " " " 2-lb. "

Price 20c per lb. for 1-lbs., in less than 100-lb. lots.

" 19c " " " " 120-lb. lots or over.

" 18c " " " " 630-lb. "

" 1½c per lb. less for 2-lb. sections. There is a bargain in these 2-lb. sections for any who can use them just as well in their trade.

PRICES OF GARDEN SEEDS FOR 1891.

Although it is impossible to give permanent prices on many seeds, so far as we can judge the price will be as follows:

HENDERSON'S BUSH LIMA BEANS.

\$15.00 per bushel; \$4.50 per peck; 75c per quart, or 40c per lb.

MARCH'S STOCK SEED JERSEY WAKEFIELD CABBAGE.

Last season we purchased of friend March about 30 lbs. of seed, thinking this would be more than we could possibly sell. March's seed is, however, so rapidly gaining in favor that we were entirely out before the end of the season. This year we have taken the entire lot of his growing, stock seed, over 70 lbs. in all; and I would advise those who wish to be sure not to be disappointed, to send in their orders at once. March's American-grown cabbage and cauliflower seed is probably equal to any that can be bought at any price on the face of the earth. We have also Fother's Brunswick cabbage, of March's growing stock seed as above, same price. Per lb., \$2.50, or 20c per ounce.

GRAND RAPIDS LETTUCE SEED.

The demand is greater than the supply; and if anybody has any for sale, we shall be glad to hear from such party at once. By the way, why doesn't somebody make a big thing of raising Grand Rapids lettuce seed? I have resolved every season that I will not be caught without a big patch of it. But the trouble is, when the heads get just nice for the table there is so big a demand for them for table use they get all sold.

POTATOES.

These will probably be \$2.00 a bushel—that is, choice ones for seed. Our selection this year will be

Early Ohio, Early Puritan, Lee's Favorite, and the Monroe Seedling. We have just received 25 bushels of the latter from friend Terry. Here is what he says about them:

FRIEND ROOT.—The season was very bad for potatoes. It was very wet first, and then very dry, making the ground so hard they couldn't expand in good shape, and then it came on wet again, and started a little second growth. But last season, with fair weather, we had more perfect tubers in a bushel than, I think, I ever saw with any other variety of potatoes. They are strong growers, do not sprout early, better quality than most late potatoes, and, though not as nice as I could wish, strictly pure. Your order took the last we had, so we could not give you any choice. I have returned 42 orders in one day since they were all sold. T. B. TERRY.

Hulson, O., Oct. 22.

EARLY SUGAR PUMPKIN.

This, also, has come to stay; but our strain of seed has, until this season, been a good deal mixed. During the present fall we had a patch of many hundred, without a single large pumpkin in the lot. The seed came from my sister, Mrs. Gardener, of Manistee, Mich. Price 10 cts. per ounce, or \$1.00 per lb.

IGNOTUM TOMATO.

I do not know what the supply of seed is this season, nor what the price may ultimately be; but we offer it for sale at present for 15 cts. per ¼ oz.; 50 cts. per ounce; \$6.00 per lb.

A RUTABAGA TURNIP FOR TABLE USE.

Oh, yes! since my last mention of turnips we have found in our own garden a good hard rutabaga turnip, beautiful in shape, and of a quality equal to any thing that even my good father ever raised. It is Burpee's Breadstone turnip. Perhaps I should say, however, that these extra-nice turnips were raised on that patch of ground I told you of, that gave radishes ready for the market in 30 days. The Breadstone turnip, of course, takes a long while to grow. Yes, they have been quite four months in coming to maturity. But I tell you, they are delicious. Price of seed, 15 cts. per ounce, or \$1.50 per lb.

ALSIKE CLOVER-SEED WANTED.

We can find a good market for alsike clover-seed at a good price. If any of our readers have seed to sell, please send a small sample, and tell how much you have, and we will make you an offer. Good clean seed will bring about 9½ to 10 cts. per lb. delivered here.

OUR BEAUTIFUL NOVEMBER WEATHER.

We have had two or three tolerable frosts; but the half-hardy things are still comparatively uninjured. We are still picking the bush lima beans. Although the vines have been killed, the beans are just about as good to cook as ever, by sorting them over, and throwing out those that are made soft by the frost. Beets are growing nicely, uninjured; the same with cauliflower, cabbage, lettuce, peas, radishes, etc. Grand Rapids lettuce, sown the 15th of July, made large heads just ready to run up to seed before the frost checked it. In fact, a few have run up to seed already, but the majority of them are just beautiful; and we are having a big trade on them by the pound. This is quite an achievement; for by getting these great heads of two or three pounds each to mature just before frost, they will stand uninjured for weeks, and perhaps months.

KIND WORDS FOR OUR STRAWBERRY-BOOK

I have "devoured" Mr. Terry's little strawberry book at a sitting, from 6 to 11 P. M. I consider it his best piece of agricultural and literary work, and your part of it is superb. The whole get-up, shape, type, engravings, and your notes and concluding article, are of the best. The book is a most fascinating one, and will be widely read, and do a world of good. W. I. CHAMBERLAIN.

Agricultural College, Ames, Iowa, Sept. 19.

[As the above comes from President Chamberlain, of the Iowa State Agricultural College, it is certainly a most excellent commendation of the book.]

For Sale at a Sacrifice.

120 COLONIES of Hybrid and Italian bees, in modified Simplicity hives. Bees in good condition. Good range. Good market.

22 23-24

B. A. KAPP, Chillicothe, Mo.

HONEY COLUMN.

CITY MARKETS.

KANSAS CITY.—*Honey.*—We quote white 1 lb. comb 16@18; dark, 12@14. Extracted, 5@7. California, 1-lb. white comb, 16@17; 1-lb. ext'd C. and C., 16; 2-lb., white, 15; 1-lb. ext'd C. and C., 14. Extracted, 6½@7. *Beeswax*, 25.
Nov. 8. CLEMONS, MASON & Co.,
Kansas City, Mo.

ALBANY.—*Honey.*—We have received up to date 1780 cases of comb honey, and 212 packages of extracted. There is no change in prices, but the demand is not quite so brisk as last month. We quote white clover, 18; medium grade, 15@16; buckwheat, 12@14. Extracted, light, 8@10; dark, 7@8.
Nov. 8. CHAS. McCULLOCH & Co.,
339 Broadway, Albany, N. Y.

CINCINNATI.—*Honey.*—Nothing new in the market. Comb honey is scarce. A choice article would bring 16@17 in the jobbing way. There is a good demand for extracted honey at 5½@8 cts. on arrival. Arrivals are good. *Beeswax* is in good demand at 24@26c for good to choice yellow on arrival.
Nov. 9. CHAS. F. MUTH & SON,
Cincinnati, Ohio.

NEW YORK.—*Honey.*—Our market is rather quiet at present, as the first demand has been covered, and weather is rather warm. There is a scarcity of fancy white glassed honey, while of all other grades there is sufficient to supply demand. Prices are a little easier. *Beeswax* 27 cts. per lb.
Nov. 8. F. G. STROHMEYER & Co.,
122 Water St., N. Y.

ST. LOUIS.—*Honey.*—We have no change to note in the market.—Prime beeswax, 25 cts.
Nov. 8. D. G. TUTT GROCER Co.,
St. Louis, Mo.

COLUMBUS.—*Honey.*—Honey selling well at 18@20c. Market very active. Extracted honey, 10@12c per lb. Only a limited amount of extracted honey sold on this market.
Nov. 7. EARLE CLICKENGER,
121 S. Fourth St., Columbus, Ohio.

DETROIT.—*Honey.*—Comb honey is selling at 15@17 cts., demand fully up to supply. Extracted, 7@8 cts. *Beeswax*, 27@28c.
Bell Branch, Mich., Nov. 8. M. H. HUNT.

SAN FRANCISCO.—*Honey.*—Honey firm, both extracted and comb; latter very scarce. Extracted, 5½@6¼; comb, 12½@14. *Beeswax*, 20@23.
Oct. 25. SCHACHT, LEMCKE & STEINER,
16 & 18 Drum St., San Francisco, Cal.

RIVERSIDE.—*Honey.*—No comb honey here. We quote to-day f. o. b. net, light amber extracted honey, 5½; amber, 5½. *Beeswax*—None.
Oct. 27. GRIFFIN & SKELLEY COMPANY,
Riverside, Cal.

FOR SALE.—Choice honey in sections, cans, and R. C. pails. Send for price list to OLIVER FOSTER,
12-ftdb. Mt. Vernon, Ia.

WANTED.—Southern honey. Will pay 5½c cash on arrival for good Southern honey.
22-23-24-1-d CHAS. F. MUTH & SON,
Cincinnati, O.

FOR SALE.—About 500 or 600 lbs. clover honey.
R. H. Bailey, Ausable Forks, N. Y.

FOR SALE.—1000 lbs. white alfalfa comb honey, in 12-lb. cases, at 16c per lb.; also 4000 lbs. extracted, very fine, in 75-lb. cans, at 10c per lb.
J. T. CLAPP, Supt. Denver Land Co.,
19-22db Broomfield, Boulder Co., Colo.

FOR SALE.—50,000 lbs. of extra fine sage honey in 60-lb. tin cans. Also two carloads of light amber honey, for sale at 6c per lb. f. o. b.
L. E. MERCER & SONS, Ventura, Ventura Co., Cal.
19-ftdb

WANTED.—One or two thousands pounds of nice comb honey. Write, giving amount on hand and price wanted. A. D. ELLINGWOOD, Berlin Falls, N. H.
11-ftdb

FOR SALE.—Choice white-clover extracted honey in 60-lb. cans, two in case; per case, \$13.50.
J. A. GREEN, Dayton, Ill.

WANTED.—One or two bbls. dark or amber honey. State lowest cash figures.
GEO. P. HOWELL,
Dauphine and Andry Sts., New Orleans, La.

WANTED.—White comb and extracted honey; state price, package, etc.
B. WALKER, 17-ftdb
Capac, Mich., or Prairie du Chien, Wis.

Wants or Exchange Department.

WANTED.—To exchange photographic outfit for bee-supplies, Safety bicycle, or best offers.
21-22d F. SHILLING, Jewett, Harrison Co., O.

WANTED.—To exchange bee-hives for bees, will guarantee satisfactory hive.
18-ftdb LOWRY JOHNSON, M'F'R, Masontown, Fay, Co., Pa.

WANTED.—To exchange apiary of 150 colonies of bees. Will take any kind of farm stock, goods or groceries.
ANTHONY OPP, Helena, Ark.

WANTED.—To correspond with parties having potatoes, onions, apples, and honey for sale. Prompt attention given to correspondence. Consignments solicited. Prompt returns made.
EARLE CLICKENGER, 121 So. 4th St., Columbus, O.

WANTED.—Price lists of Bee Supplies, etc., of those who are close to, or can make close connections with A. T. & S. F. R. R.
ALBERT W. MAKER,
Center, Oklahoma Ter.

WANTED.—To exchange Safety bicycle, ball bearing all around, used part of two seasons, cost \$100 new, in first-rate running order; 4¼x5½ photographic outfit. Will exchange for honey, wax, or offers.
J. A. GREEN, Dayton, Ill.

WANTED.—To exchange a "New Model" thrashing machine (no power) hardly half worn, all complete, good belts, does good and clean work (Nichols & Shepherd's side gearing), for a good large-sized ensilage-cutter with 2-horse tread-power.
ALFRED MOTTAAZ, Ottawa, Ill.

WANTED.—To exchange warranted Italian queens to be shipped early in June and July, 1891, for solo alto horn or tenor B-flat trombone. Write and give particulars to
JAMES WOOD,
22-23-d North Prescott, Mass.

WANTED.—To exchange a compound microscope, power 150 diameters, cost \$10.00 new; a fine instrument, good as new; back vols. of GLEANINGS; Confederate money and bonds; for a photographic outfit in good order, or offers.
J. G. FITZGERALD, Brookston, Tex.

WANTED.—To exchange six volumes "Campaigns of the Civil War," brand-new books. List furnished on application. Would exchange for good jig-saw, good magic lantern, other books, or offers.
EZRA MASON, P. O. Box 27, Medina, O.

WANTED.—Position in an apiary on the Pacific Slope, California preferred, 4 years' experience. Correspondence invited. Address
F. BETTSCHEN, Palmerston, Ont.

WANTED.—To exchange forest trees, for strawberry-plants, grapevines, and all kinds of small fruit-trees or offers.
W. G. MCLENDON,
Gaines' Landing, Chicot Co., Ark.

WANTED.—To exchange honey for a 2-horse tread-power; also heavy power mandrel.
G. L. JONES, Grand Ridge, Ill.

BARRED PLYMOUTH ROCK COCKERELS, \$1.00; hens, 75c. Also Quinby hive corner clasps for sale.
20-ftdb L. C. AXTELL, Roseville, Ill.

FINE Exhibition W. P. Rock and R. C. B. Leg. Cockerels, \$2 and \$2.50 each.
W. W. KULP,
Pottstown, Pa.



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COMMISSION MEN.

SELLING HONEY ON COMMISSION.

I think we should all try to build up our own home market, and we can do so by perseverance; but persons handling several hundred colonies of bees, and with no taste for peddling honey, often find more of it on their hands than they can dispose of in the home market. Then it is that we are thankful for honest and trusty commission merchants.

In the first place, I think people do not understand how to deal with commission men, as was the case when we began selling honey. The man who has honey or other farm produce for sale, more than he can well dispose of at home, should go to one or more of the grocermen in his nearest large town, and get the names and address of several commission men, and ask this grocer whether his dealings with such and such a man have been fair and honorable, and note it down; then select the man he thinks he can trust, and send to him for his circular giving daily prices of farm produce.

Possibly the producer has friends living in the city who could make inquiries for him, for a trusty commission merchant. That business is like all others—some very honorable men are engaged in it, and some very dishonorable ones as well. Then write to the man, telling him that you have honey to sell, and that, if he wishes to handle it for you, you will send him some. Send as soon as possible after his reply, *but not before*. Yet, one need not be in too big a rush, as we have found by much experience that the apiarist has plenty of time to sell his honey during fall and winter, and we always get just as good prices during the early winter months as in the fall months; yet I would sell as fast as I could conveniently get at it after the first of September, as honey sells most rapidly in October and November.

We always try to ship the first of the week, not later than the middle, that the honey may

arrive at its destination the same week. The apiarist should accompany the honey to the cars if possible, and help load it on, spreading out paper to set it on, and see that it is piled in with the ends of the section to the end of the car, the piles of cases not too high. The pile against the end of the car may be higher than the outside, and glass always inward, to avoid breakage.

Sometimes we can get a through car, so that it will not have to be changed from one car to another, which is often the cause of broken honey. Sometimes we can send it in a refrigerator car, which is a through car, and we could never see that the cold injured the honey. Send the bill of lading in the letter to the commission merchant, telling him how much per pound you ask for the honey. Sometimes we may name the price too high, and he can not sell; in that case he may hold yours and sell for others who have not named so high a price; but generally he will not hold it long, as he wishes his goods to move off, and he will either sell or notify you the price is too high, so you can write him again, lowering it. Of course, you keep yourself posted on the honey market. He has no right to sell at a lower price until you give directions. If the apiarist names no price, the commission man, if he is honest, and wishes your patronage, will do just as well by you as if you named your own price; but if he is not honest, it gives him a chance to cheat you if you leave the price with him, as I know they do sometimes sell at a better price than they report to the apiarist. If he is slow in writing you, write him again, and ask him how soon he will be sold out, and can handle more. Insist on having pay for as many pounds as are sent, fractions included, except, if the fractions result in less than 5 cents, it is usual to throw that in. Yet if the returns fall short 5 or 10 lbs. on several hundred, I should say nothing about it; but if it fell short much more I would instruct the commission man not to do so again, as it is not rutable—at least, this is what our most

honest commission merchant wrote us when we asked him why it was his returns were so accurate, seldom falling short any in the least. The just weights, with fractions thereof, should be plainly marked on one end of the box of honey, and the commission merchant's address stenciled or plainly written on *top*, not on the side, so that the case need not be turned over to hunt the name.

Do not send very large shipments at first until you can trust your man, and then it is better to have less at a time, and quick returns, if one wishes the money to use; and the apiarist can care for the bulk of his honey better at home than the commission merchant can, only seeing to it that he has it as fast as he can sell it. There is one advantage in sending large shipments—it is not quite so apt to be changed from one car to another, and consequently it is not so apt to be broken up.

If an apiarist has honey enough to furnish a commission man all he can sell, so that he handles no other honey, that also is an advantage both to him and you. In that case it is well to ship to him just before he is out.

Always write him kindly and firmly, as if you expected him to do what is fair and honest. Unless you are personally acquainted, never take a note from him after the honey is sold. If he has used your money, and says he can not pay you, it is a criminal act; for it is criminal to sell on commission and use that money to carry on his business. And if, after all care and painstaking, you are about to lose your money (which you will not do once in a hundred times, and perhaps never), you can put your case into the hands of a trusty attorney, to collect for you. He will charge about 30 per cent, which seems high; but sometimes he will do it for less, which probably would be cheaper for you than to make a trip to the city, if far off, and you are pressed with business at home. More than likely it would never have to be taken to court. If the attorney simply states the case to him plainly, the man would see that the better way would be to get the money for you. In Chicago, 5 per cent is reliable for selling on commission.

In case of a loss when honey is shipped, get a statement from the freight agent where the honey was shipped or started, the number of cases sent, and in what condition, and put it in a letter, with a statement from your commission merchant of the amount of loss, and inclose with it the original expense bill, and send to the freight agent where the honey was consigned, for him to forward to the general freight agent of the railroad company. Do not send in an extravagant bill, but just what the lost honey would bring you, and you will always, in time, get your pay—at least, such has been our experience. At one time we sent honey to two commission men. It was put together in the same car. One was received all right, and the other was badly broken up—so much so that 1500 lbs. was unsalable. In that case it was probably broken by the drayman, in transit from the car to the commission house.

In very cold weather, several days before we ship honey we bring the cases of honey into a warm room, so that they may be thoroughly warmed through before starting; and, if packed compactly in a car, we think it not so apt to break down as to ship frosty combs. At any rate, we like to have it in the very best shape when it leaves our hands. We generally try to ship at the close of a cold spell, just as the weather begins to grow warmer, so that the honey may not be out in the coldest of the weather.

MRS. L. C. AXTELL.

Roseville, Ill., Oct. 22.

My good friend Mrs. A., you have given us

one of the best papers on this matter of selling honey on commission that we have ever got hold of. I was obliged to smile several times to see how thoroughly you have taken hold of every little point; and I am glad to know that you enjoin more charity, and do not rush to the conclusion that *all* commission men are corrupt because a few of them are.

A GOLDEN BEE—HIVE DISSECTED.

NOTES FROM THE SADDLE, AMONG THE MOUNTAINS OF KENTUCKY.

The writer, being engaged in the lumber and stave business among the mountains of Kentucky, meets with some novel sights and experiences. Perhaps a short sketch of some of these will not be without interest to the readers of GLEANINGS.

Menifee County is the smallest, and, I dare say, the poorest county, in the State. It consists chiefly of extremely large hills or small mountains. Its mineral resources are fairly good, but entirely undeveloped. Timber is at present about the only available product. Large bodies of poplar, and much linn, besides a vast amount of other bee pasturage, doubtless makes it a good locality for bee-keeping, and one bee-keeper informs me there is a "right smart of bees in Menifee;" but, so far as I can learn, they are almost entirely in antiquated box hives, or the still more primitive section of hollow log called a "gum." I talked recently with one man who has been keeping bees for many years, and who has yet to see a queen for the first time.

A very common method of taking honey is to destroy the bees with brimstone, or, with bolder ones, by breaking up the hives. Many beech-trees are to be found in the woods; and it seems to me that, if the little fellows were as shrewd as intelligent they would all, long ere this, have deserted their masters and commenced business on their own account. They could fare no worse, with a fair chance of very much improving their condition by so doing. I thus far have met with but one man who has movable-frame hives. He has ten colonies, partly in box hives and partly in the notorious Golden hive, vended by Picklerl.

Riding along the road with "Langstroth on the Honey-Bee" strapped to the pommel of my saddle (to while away the time while feeding and resting my horse, you know) I came upon this little apiary, with hives scattered about on stumps and rocks in the yard. Such a sight, sandwiched in between high hills and forests, as it was, had a peculiar charm for me; and seeing the owner near by I cordially greeted him with "How do you do, sir?" and met with the characteristic Southern response, "How d'y?" After this, conversation ensued something as follows:

"How are your bees doing this season?"

"Oh, tolerable well."

"I see you have some Golden hives. How do you like them?"

"Oh! fine. They be the best tricks for keeping bees I've ever seed. One can take 'em all apart, and git right inside of 'em. They've got frames in 'em that come right out, and gives a chance to clean out the weevil that gets in 'em."

"I think I see they are marked patented."

"Yes, they're patented in 1877. Guess the patent 's about out on 'em. Man by the name of Picklerl 's bought the right for three States, Kentucky among 'em, and sold the right fur this county to Mr. —, over on Slate. He sells

the right to make 'em fur one's own use fur \$12. One man over here tried making some of 'em without buying the right, but they got on to it, and stopped him. Guess there'll be right smart of 'em made as soon as the patent 's out on 'em. Did you ever see any thing like 'em before?"

"No, sir, I never did; but I have heard of them, and am for that reason somewhat curious about them."

"Well, they be right smart ahead of the old boxes. I'll transfer all mine into 'em next year. I took forty pounds off 'n that 'n over thar, besides a good swarm I got of 'em. I count that purty good. Don't you?"

"Yes, that is good; but how do you take the honey off? and how do you get the bees off from it?"

"Oh! I forgot to say that they furnish a smoker and feeder with the right. And that smoker is just the greatest trick for handling bees that can be. I can just blow a little smoke into the hive, and it tames 'em so I can take out the frames, and they don't sting at all. There's two sets of frames. The ones below, we don't git much honey from. We jist blow smoke into the top frames, and that drives 'em down so we can take out the top frames that has the honey. Then we can just cut it out of the frame and put it back in again. But may be you would like to see inside of the hive. I will go get the smoker and show you."

I dismount, and tie up my horse. Crossing the fence into the yard I meet him coming with the smoker, puffing the smoke from cotton rags furiously. He turns the nozzle into the entrance of the hive; and if there is any virtue in smoke, those helpless little fellows got the full benefit of it. After smoking them vigorously through the entrance he partially removes the cover by hammering and jerking it loose, and renews the smoking business from this point. He then ventures to remove the cover entirely, and I take a look into the hive. But my sympathies being fully aroused on behalf of the frightened and half-smothered little tenants, I thought they had received punishment enough on account of my curiosity; and after giving time for the smoke to escape I suggested that he cover the little fellows up, and I would show him how to open a hive without smoke.

I crossed over to another hive, and, carefully removing the cover, I began taking out the frames, making a general examination of the construction of the hive, while my friend stands back and gazes in open-eyed astonishment. I then told him that a smoker is a convenient thing to have at hand, and sometimes serves a very good purpose when bees are disposed to be cross. But generally I have no use for it, and I regard his method of using it a positive cruelty to the little fellows.

And now, friend Root, what a sight the inside of that hive would have presented to *your* critical eye! Why, if that man were a careful and systematic observer his short experience should enable him to give all you veterans pointers unlimited on the much-vexed questions of thick vs. thin, and wide vs. narrow top-bars, end-bars, and bottom-bars; close vs. wide spacing; irregular spacing, device for exact spacing, etc., for certainly he is trying all of them, and that, too, in one and the same hive. Every frame was a law unto itself, as to thickness and width of bars, size, and position. Spaces ranged from $1\frac{1}{4}$ to 2 inches from center to center, and this variation was sometimes existing between the same two frames. The hives should have had two more frames in each tier than he was instructed to use in them. How it puzzled the brains of the little architects to accommodate their building to their master's plan, was but too plainly evidenced in the wonderful variety

of combs they had built. Every style of comb was to be found there except straight.

The exact-spacing device was unique if not practical. It consisted of two lath nails driven in *one* side of each top-bar, projecting from half to three-quarters of an inch.

I closed the hive; and on being asked what I thought of it I told the gentleman that I had seen better, but that, with some very much needed improvements in frames, it would do, but that there was not a patentable idea in or about it, and that that part was a fraud. I then invited his attention to the book strapped to my saddle, and spent an hour in showing him through it, telling him of A. I. Root, the Home of the Honey-bees, the A B C book, GLEANINGS, etc., with the result that he concluded he *must* have the A B C; and if he found it as I stated, he thought he could sell lots of them. I gave him directions how to remit, and promised that I would have a catalogue and copy of GLEANINGS sent to him.

Wheelerburg, O., Aug. 21. J. M. BROWN.

It may be well to remind our readers that this Golden bee-hive is one that has a forged testimonial from Prof. Cook. Treat every one who tries to sell or talk Golden bee-hive, as you would treat a forger or counterfeiter.

RAMBLE NO. 32.

CONUNDRUMS; MAYDOLE HAMMERS, ETC.

When we left home it was our intention to return via Syracuse, Borodino, etc.; but "the best-laid plans of men and mice gang aft aglee." The force of circumstances found us away south of that line in Chemung Co. Here we found near and dear friends, and not many bee-keepers. Our relatives and even bee-keepers, wherever we went, were very hospitable, and did their best to entertain. Sometimes we were inclined to think they were overdoing the matter. With some of our talkative friends it was a steady run of talk until midnight. We couldn't get a chance to read the papers or write a letter; and even at meals, questions were answered with our mouth full of hot potato. Sometimes the man of the house and his wife would take turns. If he stepped out, she would step in; and when both went out, the hired girl was sent in.

Now, there is quite a difference in the quality of hired girls. Some are decidedly handsome and entertaining; they read the papers, read the poets, and play the organ, and sweetly sing. With such a queen of the kitchen we didn't mind much how long the heads of the family did stay out. The smartest hired girl we met on our journey was not only musical, but full of riddles, and let one drive at us the first thing. "Why do a dog's lungs give out first?"

After many futile efforts we gave it up.

"Because," says she, "it is the seat of his pants."

Now, we had been sitting around in chairs rough and smooth, and we surmised that our pants were getting rather thin in some parts, and we surmised that this girl was insinuating; but before we could change the subject she let drive another:

"If the Devil loses his tail, where will he go to get another?"

"Don't know, unless he would come to Millport and hunt up a hired girl."

"Oh, no!" said she; "this is a no-license town. He would go where they re-tail spirits."

The hired girl's question may not entertain your readers, however, and we will turn our

attention to the leading bee-keeper of this place, Mr. Jim Stewart. He was greatly in favor of the Italian bee, and we immediately commenced discussing their merits. He had about twenty colonies, and said every one of them was fine Italians. Upon examination, the first swarm we pronounced genuine old-fashioned blacks.



THE RAMBLER TRYING TO GUESS A RIDDLE.

"Oh, no!" said he; "*you* are mistaken. Italians are very dark until the third year; then they get their yellow bands."

"Then you expect this colony of black bees to turn yellow in three years?"

"Yes, that has been my experience with them."

"Did you ever send for an Italian queen and introduce to your colonies?"

"No, sir. I leave such fancy processes to my neighbor, Nat Goodwin, who lives about two miles down the valley."

Our friend's three-year theory was easily explained. The wonder is, that his neighbor's Italians did not change his blacks to Italians at a more rapid rate. Nothing we could say would shake his three-year theory.

In Elmira we made a short stop. The only bee-keeper we called upon here was Mr. Rutan, a carpenter by trade, owning about forty colonies. These were quite near the sidewalk, with no intervening fence, and we were informed that pedestrians were hardly ever disturbed or stung, and Mr. R. seemed to be enjoying his right to keep bees in a city. His hive was patented, and has the high-sounding title of "King of the West." A neat honey-house stood convenient to the apiary, and was well filled with honey and fixtures.

Our next stop of any importance was in Norwich, Chenango Co., where a hammer factory attracted our attention. The Rambler's cousin has much to do with this factory, which made it the more attractive; and as every bee-keeper is a wielder of some kind of hammer, perhaps a few facts about this establishment will interest.

Several years ago, David Maydole, an humble blacksmith, invented the adze-eye hammer, and made one for himself. A carpenter saw it and wanted one, and he was supplied; then several men who make nail-driving a business wanted hammers. Thus orders continued;

more men were employed, a new shop erected, machinery invented, and the Maydole hammer-works arose to their present proportions, occupying a large brick building, and employing over one hundred men. Over sixty different styles of hammers are made, and tons of steel are manufactured into one of the best hammers known: for a hammer with the Maydole mark upon it has a solid reputation. The hammer was never patented; and during our trip, everybody was harping on the one string, "dull times." But in answer to our question as to dullness in the non-patented-hammer trade, I was told that the business had never seen dull times. Their orders were away ahead of their manufacturing capacity, and they were preparing to enlarge their works. Mr. Maydole now rests in the cemetery, but his works live after him.

THE RAMBLER.

Friend R., there is a bright moral to your story of the Maydole hammer. The originator was an energetic, go-ahead son of toil, and he reaped his reward. Opportunities are constantly opening up in almost every avenue of work, to go and do likewise. "Seek, and ye shall find; knock, and it shall be opened unto you."

CLOSED-END FRAMES.

A FURTHER DISCUSSION OF THE SUBJECT.

I had begun to write about a few results of moving bees with the wide and narrow end-bars, and the use of reversing wires, when to-day I received Oct. 25th GLEANINGS. In it I see that you have nearly if not quite decided on the wide end-bar and the follower. I have in my possession a letter from you concerning a hive I wrote to you about, and almost fac-simile in parts; and in it you say that it is too complicated. Now, I wish to give you two points that, within the past five years, I have had to deal with enough to make me cautious. First, that the follower must not come nearer than $\frac{3}{4}$ of an inch to the bottom of the hive, or there will be some expensive mashing some time of a queen. Second, if you allow a half-inch space between that follower and the hive side, one of these days there will be some comb built in there during a sudden flow of honey, when it is least expected.

On page 745 you have pictured a cross-section of nearly the hive that I have used and seen used—the staples and all. Now, I must say this for hives that are to be moved; and, in fact, for any other purpose. Those staples are not worth a fourth what your reversing wires are. I have carted bees around from place to place for over 15 years. Until I obtained some of those reversing wires, I have not been without more or less frames and combs being broken from the top-bar. A sudden jar will start them somewhere, and those jars come when least expected; but with the reversing wires, all the strain comes on the center of the end-bar; and if the combs have been properly handled they have been reversed enough to make them solid in the frame.

Another feature of the wire is, that the spring in the end of it is of value in moving because of the give that there is to it. I have just been moving quite a number of hives to have them in a safe place for winter; and although all the narrow hanging frames were wedged as tight as they could be, some of the all-wood top-bars were started, as they have been in years before. Many of those with tin corners needed to have the pliers used on them to straighten them; but those with reversing

wires were in no way injured, and some of all sorts were on the wagon at the same time.

Now to go back to the hive you are thinking of: $12\frac{1}{2}$ inside measure; wide, make it $12\frac{1}{4}$ or $12\frac{3}{4}$, and use two followers $\frac{3}{8}$ or less thick, with the lag strips on both sides at the ends of the follower, and a $\frac{1}{4}$ -inch wedge. Those followers will and do spring. I have used the follower with the narrow frames for the past 12 years, alongside of hives without it, and the follower is worth more, from the ease that it makes in handling, than it costs, every season; and with two followers in the hive with wide end-bars, the two followers are all ready to contract the hive to the combs in the center, be it 3, 4, or 5, for their winter and spring packing.

There are a great many who will say, "Too many loose pieces;" but actual use makes me think differently; and trying the Hoffman-Langstroth frame since 1878, along with the others, and the wide end-bar since 1881, I must say I will have only the wide end-bars for me on the new frames in the future; and I want them to be hanging frames too. I have used, since 1886, 1200 hanging frames with the reversing wires on; 300 of them were new wide-end-bar reversing frames, and they will continually replace all others. In 1884 and '85 I helped to make and use 45 hives that used the L. frame with $1\frac{3}{8}$ end-bars, top and bottom bars $17\frac{3}{8}$ long, held in place by tin rabbets, top and bottom fastened by hooks. This made a perfect reversible hive and frame, separately or together; but, no more of them for me of the L. depth, and all the hive to reverse. They are too slow to handle, and are not as satisfactory as are the hanging frames. Neither do I want the standing frame, although there are plenty of nuclei to be seen in several places made by setting up two or three wide-end-bar frames with a board on each side and a string tied around. It is fun sometimes to save a lot of cells in that way. It is simply two side panels and two or three combs in closed-end frames, and two wire springs from telephone wire bent thus — one snapped on to each end to hold the side panels in place. These side panels are just followers $9\frac{1}{2}$ wide, $17\frac{1}{2}$ long, with $\frac{1}{2}$ -inch strips nailed on the ends on both sides. The back ends of the frames rest on the board if you like. They all pile away nicely in the fall and winter when not in use.

I also see that you have taken note of the thick top-bars for the prevention of the brace-combs, and that the scant bee-space is another preventive of the brace-combs and climbers between the crate and brood-frames. I have been using both thick and thin top-bars; but when the bee-space above the brood-combs was $\frac{1}{4}$ inch, the brace-combs were missing. Unless the space between the brood-combs and the space between the two sections corresponded, then there would invariably be a little ladder built; but with the inch-wide top-bar there is far less chance; and an inch-wide top-bar makes more difference than the thickness of it does. I have used top and bottom bars $\frac{3}{8}$ thick up to $1\frac{1}{2}$ thick, and I have watched those used by others; but the spacing above the combs makes more difference than all other causes put together. I became convinced of the difference of the space connected with brace-combs in the summer of 1884; and also that the scant space, when the two stories were used for extracting, this shallow space would be filled nearly or quite full of propolis. Where I have cared for bees for the past 12 years there have been a few localities where cedars, hemlock, tamarac, pines, and juniper abound, and in those localities, after the summer harvest is by, the bees take delight in gluing every joint

tight that they can get the gum into. So there are two evils to try to dodge—the comb-braces on the wide space, and the propolis on the narrow space. Which is it to be? and I am not the only one who keeps bees and is between the two fires? H. L. JEFFREY.

New Milford, Ct., Oct., 1890.

By consulting our sectional drawings on page 745, we find that we left $\frac{3}{8}$ inch below the bottom of the follower, so we are all right on that score. About those staples: We have been experimenting some on the driving of the same in closed-end frames; but on account of their twisting in driving we have decided that a good substantial wire nail, with a finishing head, such as is used by Mr. Tunnicliff, is better. I agree with you, that a closed-end frame for the Dovetailed hive should be made to *hang* rather than to *stand*; but I shall have to disagree with you somewhat in regard to reversing-wires. These wires will all stick out so as to require a space between the ends of the frames and the end of the hive. For closed-end frames it is very desirable, and, I might almost say, necessary, that the bees be excluded from the side next to the hive, otherwise they will propolize the outside as well as the inside places of contact between the uprights. E. R.

SPACING FRAMES IN CALIFORNIA.

A COMPARATIVE TEST BETWEEN $1\frac{3}{8}$ AND $1\frac{1}{2}$ INCH SPACING; A CONCLUSIVE RESULT FOR $1\frac{3}{8}$.

I will give you some of my experience with spacers, spacing, and moving bees. About ten years ago, when I owned about 40 colonies of bees, I thought something to hold the frames the right distance apart would be a good thing, so I bought a lot of blind-staples and drove two in each end-bar on opposite sides of the frame, in all the frames in my apiary. I extracted from the brood-chamber then, and soon found that the staples would not do in frames that had to be extracted; so I pulled them all out and have not tried spacers since. If I were answering the question on page 675 now, however, I would say, "Yes, if you have learned the business so you do not need to look over all the brood-combs every week to know that a colony is doing well." A frame like the modified Hoffman would be less bother through the season than it would be to fasten all the frames twice a year for hauling. This applies to brood-chambers only. Super frames should never have any projections, and should never be over $\frac{3}{8}$ wide.

I use a device in hauling bees that holds the frames, on the same principle as the Hoffman frame—that is, by making a solid bearing for three inches down the end-bar. I think it was invented by R. Touchton, and is made as follows: One piece is $\frac{1}{4} \times \frac{1}{4}$ by as long as your hive is wide inside; nine pieces $\frac{1}{2} \times \frac{1}{2} \times 3$ inches; nail the nine pieces to the first piece in the shape of a garden-rake, $1\frac{1}{2}$ inches from center to center, and shove these teeth down between the end-bars. Before I came to California I always spaced my combs $1\frac{1}{2}$ inches, and, like a good many others who are spacing their combs that distance now, I thought it was right and best. When I came here I found most beekeepers spacing their combs $1\frac{3}{8}$ inches. I was prejudiced against that distance, and changed

200 colonies to $1\frac{1}{2}$, and ran them that way for two years, side by side with others spaced $1\frac{3}{4}$. The hives spaced $1\frac{3}{4}$ reared more brood, stored much less honey above the brood in the brood-chamber, and consequently stored more in the supers, built less brace-comb between the top-bars, and reared less drones. I changed all my hives back to $1\frac{1}{2}$ centers, and it would be a hard matter to induce me to even try $1\frac{1}{2}$ -inch spacing again. I say that $1\frac{3}{4}$ is right for the brood-chamber, and from $1\frac{3}{4}$ to $1\frac{1}{2}$ is right for the extracting super, with a queen-excluder between super and brood-chamber.

My honey-crop this year is 27,000 lbs., all white and thick, and put up in new 5-gallon cans, two in a case.

There is a war going on in California, between new honey cans and cases, and second-hand oil cans and cases. The new cases cost 90 cents each, and the oil-cases cost 40 cents each. Dealers keep advising bee-keepers not to use oil-cans, and yet they will not pay the difference in cost for new cases. If it were not for the fact that oil-cases are bound to hurt the market for California honey, we would all put our honey in them, for we can not afford to pay from one to two hundred dollars a year to have our honey look nice, and not get any more for it. Fillmore, Cal., Sept. 26. J. F. MCINTYRE.

UNITING BEES, ETC.

FRIEND DOOLITTLE GIVES US MINUTE DIRECTIONS JUST HOW TO DO IT.

I have just been uniting up some weak colonies of bees, or, rather, large nuclei, as they would be more appropriately termed; and I liked the way I did it so well that I thought the readers of GLEANINGS might wish to know how it was done. In the first place, the queens in a part of the colonies were taken away to fill late orders; but if I did not wish to use the queens not needed in the united colonies, I killed the poorer ones, as I considered them; for, so far as I have practiced this plan, I find that queenless bees are less inclined to quarrel, and are more disposed to stay where put, than are those having queens. Having the queens disposed of, from the colonies which are to be united, wait three days to a week (three days in any event, so the colonies may realize their queenlessness) for some cool cloudy day when it is from five to ten degrees colder than is required for the bees to fly, when you will find the bees all clustered compactly, something the way they are in winter. When taking the queens away, take all the combs from the hives but three (the three which contain the most honey), and spread these combs about three-fourths of an inch apart, setting them out about two inches from the side of the hive, so that the bees may be all clustered on these combs instead of hanging to the sides or any part of the hive. The hive which is to receive these bees and combs is to be also prepared beforehand, by taking away all the combs but three or four, those being left being the ones having the most honey in them, said combs being placed close to one side of the hive.

When the right day arrives, light your smoker and put on your veil, for in following the plan described you may not be able to use the hands to get a stinging bee off the face as you otherwise would: for, during a part of the operation, both hands will be so employed that you can not use them at any thing else. Now go to the hive having the queen, and uncover it, giving the bees a little smoke to keep them quiet, and leaving the hive open so that you can set the other frames right in without any hindrance.

Next go to one of those that you took the queen from, blowing plenty of smoke in at the entrance while uncovering the hive. Blow a few puffs of smoke around the combs and over them, when the smoker is to be set down, the two front fingers placed between the two first frames near their ends, the large fingers between the second and last frames, while the third and little fingers are placed beyond the third frame. Now close up with the thumbs and all of the fingers, thus lifting the frames and cluster of bees all out of the hive at once, when they are to be carried to the open hive where they are to stay, and sit down in it all together, close up to the frames of bees that are in this hive. Go back and get the smoker, and blow smoke enough on the bees to keep them down, when you can arrange the frames, division-boards, and hive, as you like, without very many, if any, bees flying. Should a few bees stick to the hive that you took the frames out of, bring the hive to the one having the united colony in it, and brush them out on top of the frames, as they will be pretty well chilled by this time. In doing this you will have to smoke those in the united colony pretty well, or many will fly at you, for these partly chilled bees will throw their poison out on their stings so that the scent of it will anger the bees that are in the united hive. If you fixed all as it should be when taking the queens away and preparing for uniting, and smoked the bees as I have told you, there will be only now and then one that will require this last operation, as all will be snugly clustered on the combs. Close the hive as soon as you have things fixed to suit you, when you are to remove every thing from the stand of the colony that was united with the other, so that, when the bees come to fly on the first warm day, they will find that all that looks like their old home is gone. Some bees will fly or hover over the old spot where home was, but, not finding it, will return to the united colony. In this way I never have had any quarreling of bees, nor any queens killed; and it is so simple and easy that I like it much the best of any plan of uniting bees late in the fall.

DEAD BEES AT THE ENTRANCE.

A correspondent writes thus: "We have had a week or more of very cold weather for the time of year; but yesterday was so pleasant that the bees came out from the hives. This morning I found great numbers of dead bees at the entrances. Was it so cold that they died before going back in, or what?"

No, the trouble was not that it was too cold when the bees were flying, for bees rarely fly at this time of the year when it is too cold for them to get back. Really there was no trouble, unless it was that your bees were not properly protected from the cold during the previous cold spell. I would not be afraid of guessing wrong if I said that your bees are in single-walled hives; for in chaff hives many bees do not die during the first cold snap, as they do in single-walled hives; for I take it for granted that the dead bees you found out at the entrance were the bees which had died in the hive during the cold spell you speak of, and that the live bees had drawn them out at the entrance on this pleasant day which you speak of. Now, while a chaff hive keeps many bees from dying early in winter, yet I have an idea that these bees that do thus die on the approach of winter are nearly or quite worn out by old age, hence they do not keep pace with the receding cluster, and are thus carried off early in the season, yet are really of no great account, although making quite a showing at the entrance, to one not knowing the cause of their being there.

Borodino, N. Y., Oct. 29. G. M. DOOLITTLE.

THE INTERNATIONAL BEE-ASSOCIATION.

A FEW NOTES OF THE PROCEEDINGS, BY
ERNEST.

On account of the very poor season, and the failure to get reduced rates, the most of us predicted, in our own minds at least, that the meeting at Keokuk would not be as largely attended as the former ones. But we consoled ourselves that what it would be lacking in numbers would be made up in enthusiasm. Well, we were very much disappointed as to the attendance, and agreeably so. If I am correct, there was the largest enrollment of members ever made in its history, and I heard on all sides that it was the best meeting ever held in the history of the association. While the one at Brantford had, I believe, a larger daily attendance, yet the paid membership was greater at Keokuk. It was surprising how the bee-keepers of the Mississippi Valley and adjacent territory turned out. Well, the fact was, that not all of them had had a poor honey crop, and, of course, they came. Others had a poor season as usual, but they could not afford to miss the opportunity. There were several from Colorado; one or two from Arizona; two from Canada; some from Kansas, Michigan, Ohio, Indiana, besides a good representation from the border States—Illinois, Missouri, and the home State, Iowa. The failure of the honey crop, and the absence of reduced railroad rates, was more than counterbalanced by the persistent and efficient services of the secretary, Mr. C. P. Dadant.

The two representatives of GLEANINGS had figured to be on hand at the opening of the first session. The train being behind time, we did not arrive until near the close of the session. The question-box had been opened, and your humble servant whipped out his note-book and pencil, craned his neck, and proceeded to jot down a few things that seemed to him to deserve special mention. Let me say right here, that this report is far from being complete. It contains only a few of the good things said and done.

At the latter end of the morning session, the first question I heard was, "What is the relative consumption of stores as between sugar syrup and good sealed honey?" It has generally been thought that there is but very little difference in favor of either; but by some careful experiments, President Taylor had found that there is a decided difference in favor of the sugar syrup. On honey the bees are very apt to become uneasy and excited; and careful weighing showed that the consumption of honey was much more than the consumption of the sugar syrup. I think he said the bees would consume about a half more of honey than of sugar. Some were inclined to take exceptions, on the ground that the experiments were not carefully conducted. I remember that W. F. Clarke asked the president *why* honey excites the bees more, and then went on to give his reasons for his disbelief. The president interrupted him by saying, "Let me ask *you* a question. What effect does honey have on you?" "I can not eat a bit of it," said Mr. Clarke; "honey gives me colicky pains."

The convention roared with laughter, and Mr. Clarke resumed his seat. I do not give this to show that Mr. Clarke was beaten in argument, but simply as a sample of the pleasant bantering back and forth.

CANE OR BEET SUGAR—IS THERE ANY DIFFERENCE?

Mrs. Harrison asked whether there was any difference between cane and beet sugar. Opinions were various. The president argued that there was a difference. A. I. Root, Mr. Dadant,

and others, claimed that there was none. Mr. Secor cited the *O. Judd Farmer*, to the effect that cane and beet sugar are precisely one and the same thing. I did not say so at the time, but somewhere I read (I can not say just where I saw it), that the amount of cane sugar produced is very small indeed compared with that produced from the beet. If this be true, the probabilities are that the sugar on our tables, and that which we feed our bees, is *beet* sugar. Mrs. Harrison stated that the *British Bee Journal* was authority for saying that there is a difference between the two sugars, and that of the two the beet is inferior. Oh how we missed Prof. Cook at this point in the convention! We all knew he could help us out. Well, it is not too late yet.

EXTRACTING HONEY TO FEED SUGAR.

A further question was put as to whether it would pay to extract the honey, and feed sugar. It was argued that it would not, because the stores usually left for winter are from fall sources; and if the bees do consume more, nothing would be gained, from a dollar-and-cents point of view, by extracting and feeding. R. McKnight thought any one who would advocate any thing to the contrary was a fit subject for the penitentiary. Dr. Mason quickly got up, "Then I am a fit subject," and sat down, amid roars of laughter—another sample of bantering. Along in the afternoon we listened to the

PRESIDENT'S ADDRESS.

It was an able document. He called attention to the lessons of the poor season. There are a great many outgoes and expenses, and the bee-keeper becomes discouraged. Total failures are expensive; but, he argued, we are not paying too high a price for the benefits of that which will follow. In the convention there should be a free discussion—no personalities. Instead of saying, "In my opinion," state what you know to be a fact, leaving out the matter of opinion, because that is understood. Free discussion leads to the best understanding. He thought the floating character of our association a bad feature. There is no fixed membership. Even the officers may not be members next year. Why not have the association incorporated under the law, and members contribute, whether they go or not? He advised that we consider the matter of the World's Fair, and that immediate action be taken.

The address was not discussed immediately, but a committee was appointed to consider some of its salient points. For further particulars, see *Myself and My Neighbors*, elsewhere.

BEE-PASTURAGE OF THE UNITED STATES.

A paper was then read by A. I. Root, on the bee-pasturage of the United States. He alluded to several of the promising sources of nectar, and gave, incidentally, a talk he had had with Mr. Draper and Mr. Hambaugh, on the train, in regard to Spanish needle. Both of these gentlemen stated in convention that they live not a great way from the Mississippi Valley, and had secured a large crop of honey from Spanish needle. In fact, this seemed to be a never-failing source. Many of their customers prefer it to clover. It is very thick, of good color, and of delicate flavor. Mr. Hambaugh had secured in five days, from one hive, 73 lbs. I was surprised to learn that the Mississippi Valley, along in these regions, was covered in waste places with Spanish needle; for it seems there are a good many bee-keepers who get a nice paying crop from it. It is a significant fact, that in one locality a honey-plant may be a valuable source of nectar, while in others it may be worthless: so with Spanish needle. In the matter of honey sources we should take into

consideration locality. This point was emphasized by Mr. W. F. Clarke. Mrs. Harrison, in crossing the Mississippi, had discovered hundreds of acres of Spanish needle, and the bees were just rolling in the honey.

BUTTON-BALL.

Mr. S. A. Shuck had no Spanish-needle, but button-ball honey. It comes in bloom with him about the 5th of July. It is of good color, and yields a good quantity. Under favorable circumstances he had secured 7 lbs. per day per colony for eight days.

THE CHAPMAN HONEY-PLANT.

—A. I. Root related that Prof. Cook had tried it on an extensive scale, and that he (Cook) had concluded that it was not a profitable bee-forage for cultivation. Mr. Axtell had tried it, and it yielded honey, but he did not think it paid.

QUESTION-BOX.

On the evening of the first day the question-box was opened again. The question, "Can poultry-keeping and bee-keeping be profitably combined?" Dr. Miller was called upon to answer. He said he did not know very much about it, but he would read a letter from a friend, on the subject. All the reporters, anticipating something solid and serious, grabbed their pencils and began jotting lively. Very seriously and innocently he read Sockerie's experience with a sitting hen. Very soon the reporters and the rest began to "catch on" to the hoax, when they perceived that it was a side-splitting impersonation rather than a serious detail of facts. Those of you who have had the pleasure of hearing the doctor deliver some of his comic pieces, can get something of an idea of the fun we had. Stripping the little story of its German brogue and its funny hits, a certain Dutchman, not very big up and down, but big all around, proceeded to set an old hen in the barn-loft. He could not reach up to the hen's nest with a hatful of eggs in his arm, so he stood upon a barrel. Perhaps you know the rest. The head of the barrel gave way, and his fat sides telescoped into the barrel, but the nails sticking out prevented his wife from pulling him out. I do not know, but perhaps we had better give the whole chicken story at a future date, so the doctor will please present it to our readers.

Another question was, how to get rid of black ants in the apiary. Pour coal oil, coal tar, or diluted carbolie acid on their nests.

My note-book does not record very many things said and done at this stage of the convention. I presume I got tired, or, what is more probable, there was so much fun that the pencil could not properly record it.

THE "DON'T KNOWS" OF BEE-KEEPING.

The next morning we listened to a spicy and well-written essay—in fact, a model for bee-conventions, from Dr. C. C. Miller, entitled, "What I Don't Know about Bee-keeping." He did not know how far to space combs; whether there is greater or less loss from wintering indoors or outdoors; whether poor seasons are valuable to bee-keepers or not; how to prevent brace-combs; whether fixed frames are practical or not, and how to prevent swarming; and, "I don't know"—but I had better stop. And he closed with a hearty applause. His "don't knows" set us to thinking. When a practical chord is touched, how a convention will respond! The doctor touched a number of practical chords, and the one singled out in particular was very suggestive.

HOW FAR TO SPACE COMBS.

It was argued that Nature spaces them about $1\frac{1}{2}$ inches. But the opinion seemed to prevail,

that, because Nature does so, it is no reason why bee-keepers who wish to properly *control* brood-rearing should do so. One important fact was brought out, that several who had formerly used $1\frac{1}{2}$ -inch spacing had discarded it for $1\frac{3}{4}$, but nary a one was there who had tested both ways of spacing, and had settled on $1\frac{1}{2}$ -inch. Testimony was not wanting, to the effect that more brood could be produced on $1\frac{3}{4}$ spacing. Wm. Lyon, of Burlington, Ia., said that, when bees wish to go into sections, space the combs closer. By so doing, bees are less liable to swarm, and would the sooner put the honey above. He even went so far as to say that thus he almost entirely does away with swarming. Dr. Mason and A. N. Draper had used successfully spacing as close as $1\frac{1}{4}$ inches from center to center; but the convention seemed to feel that that was going a little bit to the other extreme. Mr. L. C. Axtell argued for $1\frac{3}{4}$, but he did not have very good success with closer spacing. He has a mellow soil, and occasionally his hives would tip one side and the other. He does not wire the combs, and sometimes combs would bulge toward each other by the tipping of the hive, making less than $1\frac{3}{4}$ spacing in places. He noticed that brood-rearing was curtailed in said places. He used fixed frames, closed-end Quinby, on $1\frac{3}{4}$ spacing, and liked it. B. Taylor had used $1\frac{1}{2}$ -inch spacing, and had changed to $1\frac{3}{4}$. The latter he had used for 26 years, and saw no reason for changing.

There was a good deal of bantering in regard to Dr. Miller's expression, "I don't know." The doctor, having been a bee-keeper for many years, has learned that there are a good many other things that he does not know. While we were arguing about what we *did* and *didn't* know, our old friend J. W. Bittenbender, of Knoxville, Ia., arose, and repeated one of Josh Billings' sayings: "What is the use of knowing so much, when so much you know ain't so?" and sat down without comment. Verily, brevity is the soul of wit, sometimes.

[To be continued.]

THE DOVETAILED HIVE.

WHAT HENRY ALLEY HAS TO SAY OF IT.

During the last thirty years, which comprise my experience in bee-keeping, I have given a good deal of study to the bee-hive question. Some twenty years ago I obtained a patent on a hive. I believe that that hive was the first double-wall hive used in this country—certainly the first patented double-wall hive. Since that time I have constructed about a dozen different styles of hive; but at no time did I lose sight of several important features that, it seems to me, should always be found in all good bee-hives; namely, the Langstroth standard frame, with a wide and thick top-bar. What I call a bee-space was another important feature always retained in all styles of hives used in the Bay State Apiary. Not over $\frac{1}{4}$ inch, and slightly less, is what I consider a proper bee-space between the tops of the brood-frames, or whatever is used over them, whether it is a section-case, honey-board, or what not. When more space is given, brace-combs are found, as well as propolis, etc.

Early in October I visited a large display of bee-hives at the Rhode Island State Fair. I think there were not far from thirty different styles of hives on exhibition. There was a hive from about every dealer in the country who had ever made or invented a hive. I looked the entire lot over, and saw but one hive that seemed to combine many good features, and this hive

lacked but one thing to complete it. This hive was Root's Dovetailed. The thing lacking was an outside case for winter and spring protection. With that addition I should consider the Dovetailed hive as good as the Bay State, as then it would combine nearly all the good features of the hive we use in our apiary. Bear in mind, we use, in the Bay State hive, both the closed-end and standard Langstroth frame.

I have had a good opinion of the Dovetailed hive; and now that the out, or winter case, is to be adopted, it seems to me it must prove to be one of the best hives in use.

I don't want to say one word against the other hives I saw at the R. I. State Fair; but it is a wonder to me that such hives are used by any one. The lumber-bill for 100 such hives, it seems to me, must be immense.

PACKING BEES FOR WINTER.

I may be radical on this point, yet it does seem to me that, with any good double-wall hive, no packing is necessary in winter.

Now, Bro. Root, as you are a strong advocate of packing, why not try an experiment? Why not place 50 hives in a row, pack each alternate colony, and let the others winter with the air-space open?

I know from past experience, that the unpacked hive will not only winter better, but will do the best the following season, and come out stronger, cleaner, and better in every way in the spring. Here in New England, where we never have more than three days of settled weather at one time, we need no packing, save a mat or cushion over the bees, to absorb moisture and prevent too much draft up through the colony and combs.

HENRY ALLEY.

Wenham, Mass., Oct., 1890.

Thanks for your testimony for the Dovetailed hive. When it was originally constructed, we did not have in mind any pet theories, but simply endeavored to combine in one hive the demands of the largest and best and most practical bee-keeping, having in mind due reference to economy; and that these requirements have been met is evidenced by the "carload" demand for it. You are right. A wide and thick top-bar with scant $\frac{1}{4}$ -inch bee-space, is among the necessities of a good hive.

I am greatly pleased to get so good an authority as yourself for an outside protecting shell for winter; and I am not sure but that your remark in regard to *packing* versus *air space* is true. I have, for a year or so, hoped that it might be so; and facts are beginning to come in with the proof. If we can leave out packing (I say *if*) and yet obtain as good results, it will be a blessing to bee-keepers. All single-walled hives can be cheaply converted into double-walled winter hives; and then, too, during summer these winter cases will be worth all their cost for shade when placed over supers while on the hive. Mr. Elwood uses just about such a case over his supers, and yet whole apiaries of his were exposed to the direct rays of the sun. They are better than a shade-board, because it shades the *sides* of the supers as well as the top. Here is an article from J. A. Roe, in a similar strain:

THAT OUTSIDE PROTECTING SHELL.

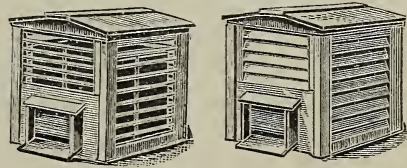
I was very much interested in W. A. King's article on page 697, and in Ernest's comments,

especially where he speaks of winter cases, as I was then getting out a descriptive circular of what I call the "hive-protector." This is made high enough to take in a single-walled hive, with two cases of sections or an extracting super, and large enough to set four chaff dummies around the brood-nest for winter; or, what I consider better and more convenient, is the band suggested by Ernest for his winter case. The hives are to be left in the protector the year round, as they afford protection from the hot sun and cool nights in the summer time. But, as A. I. R. says, when these cases are made good and substantial, and all complete, it brings the cost to about the same as a good chaff hive (including the cost of inside hive), so it is not so much a matter of economy as to whether this arrangement is more desirable than a chaff hive. As the inside hive can be readily lifted out, this will be much easier than lifting heavy chaff hives where new swarms are hived on the old stand, or any operation requiring hives to be moved; and with the chaff band made from thin lumber, and permanently packed, it is but the work of a moment to set this over the brood-nest, put on a top-cushion, and you have as good a chaff hive as there is. Where bees are wintered in the cellar it is a small job to give them spring protection with this arrangement. A great many neglect to protect their bees, and I think those who do find it an unpleasant task, to say nothing about the unsightly appearance of the apiary, and the litter when unpacking in the spring, or the injury that may result from leaky covers.

J. A. ROE.

Union City, Ind.

We take the following description of the cuts from his circular:



J. A. ROE'S OUTER COVERING FOR SINGLE-WALLED HIVES.

I desire to say a few things about bee-hives, and hope you will give me a patient hearing. "Which is the best general purpose hive, i. e., the chaff or single-walled hive," always has been and perhaps always will be an unsettled question. That both have their good and bad points, I think most will admit. Let us see: The single-walled hive does not cost nearly so much as the chaff hive; it is much easier handled (and this is quite an item where new swarms are hived on the old stand), and is a much cooler hive in summer. I know a great many will not agree with me in this last statement, claiming that a chaff hive is cooler in summer. But how can it be, when we know that any thing that will confine the heat in the winter will do the same in the summer? and good authorities say the heat of the brood-nest during the hot season is nearly 100 degrees. If this be true, it is also a fact, that, the thinner the hive up till the time the outside temperature reaches that of the inside temperature, the better can the heat escape; and the thicker the hive, the more will it be confined. I have noticed that bees always lie out much more in chaff hives; and I fail to see the difference between wearing an overcoat to keep the heat out and keeping bees in chaff hives to keep them cool. * * * The hive-protector makes a chaff hive out of any single-walled hive for winter, and gives plenty of shade and ventilation for summer. It is made of such dimensions that a single-walled hive with two cases of sections can be set inside of it, and four chaff dummies, three inches thick, set around the hive (these dummies are made of thin lumber, and should be kept in the dry when not in use). The hives are not to be fastened in the protector, and it does not interfere in the least with the ordinary

handling of single-walled hives, such as hiving new swarms on the old stand.

The protectors are to be leveled up and located permanently; and when hives are to be moved, lift the inside hive out. Shade for the hives during the heat of summer, I think, is quite an advantage; but shade-boards are unsightly, and frequently blow off. The hive-protector not only affords perfect protection from the hot sun, but also from cool nights, when the bees are liable to be driven from the cases. The protector is made in two styles, the one with shutters, and the other using thin lumber for siding. I do not advise the shutters, on account of the extra expense, as just as good ventilation can be secured by raising the lid an inch in the hottest weather, when the heat of the inside hive will cause a current of air to pass up around the hive.

THE HONEY CROP OF SOUTHERN CALIFORNIA.

BEEES AND FRUIT: VALUABLE TESTIMONY FROM
A BEE-KEEPER AND FRUIT-GROWER THAT
BEEES DO NOT TOUCH SOUND FRUIT;
YELLOW-JACKETS THE GUILTY
CULPRITS.

I caught particular fits for predicting in GLEANINGS that Southern California would produce but half a crop of honey unless we had later rains. Now, although every one was watching and waiting, hoping and praying for them, they never came. Then they got mad at me—especially the honey-dealers—and pitched into me. Mad? Yes. What right had I to call the attention of the world and his brother to the possible failure of the honey crop? Would it not be bad enough when the world *had* to know it? Why alarm the trade, and send up the price of honey only to collapse again? Besides that, the failure would never come. Look at the face of nature! Was any thing ever more promising? I looked. Gentlemen, I admit the wide earth is covered with a carpet of matchless green. The alfalaria, the buttercup, and the daisy, with a thousand other flowers to the deponent unknown, are fighting for standing-room all around me. The king of the honey-plants—the black sage—all along over the mountain-sides, throws out its sheen of white purple snow. We look around us, and the eye is “dazzled and drunk with beauty.” The air is loaded down to the hub with the perfume of the flowers. We feel all over that it is simply ecstasy to live. Any man can jump up and yell—yell with pure and unalloyed delight: yell that he has such a country—all his own; yell that he has a home to go to, and doesn't have to board out. But in two or three weeks there will be a change—all these flowers will become thirsty. They will look up all the day long to the pitiless sky, and yearn for a little water. The stalks that now bear up their load of bloom so proudly will creak in the wind, and moan for a little water. The leaves will reach out to you with a pallid and appealing look, and seem to ask you with such beseeching tenderness to give them but one drop of water. Were you ever starving to death—starving for water? Were ever your lips parched and black—your teeth covered with a thick coat of gum for want of water? No? Then you know nothing about it. I imagine it is about the same way with the flowers. We see their pallid faces—see their fading forms—see their daily change till they droop and die. But we know not whether they have a consciousness of the change. Now, gentlemen, have any of you got a little patent pump about your clothes, that will water all this broad expanse of Southern California? No? Then look out for the honey crop. Those who are close to large alfalfa fields *may* get a good crop—as they mostly do. But

all who depend upon wild feed—as nearly all do—will suffer indeed. And we did suffer.

BEEES AND GRAPES.

I have seen Prof. McLane's experiments with bees and grapes called in question by some of the bee-papers. But I think I could convince the greatest skeptic of their truth and reliability. We are now picking our grapes and making our raisins. Now, friend Root, walk up into the vineyard with me. You see we are cleaning the grapes at tables. You see and hear thousands of bees on the tables, on the long line of cleaned grapes, on almost every vine around you, and flying around your head. Take this bunch of grapes. You see half a dozen bees busy on it. They are sucking the juice from the half-decayed grapes, and those that have been picked by birds. You know already that a bee will suck the juice from rotten or broken fruit. But here is another bunch—the grapes about as large as your best eastern plums. Every grape is as pure, perfect, and unblemished as if it just came from the hands of the Creator. Hold that up for five, ten, fifteen minutes, and not a single bee will alight upon it. Oh, yes! they will fly round it and snuff at it, but they won't alight on it. Why? Simply because there is nothing for them to get, and they won't try to pierce a grape. Now you are satisfied that no bee is going to alight on that bunch. But pull one single grape off it, and see the change! There is a large, luscious grape at the top—near your hand. But, hold! Have your mouth wide open and ready to shut the door when the grape goes in, or you may have a small family of bees in there too. You must do this or take a walk once or twice around that grape before eating it. The moment the grape leaves the stem the bees will dash at both of them for the fresh juice. These facts, which I have tested again and again, prove that bees do no injury to grapes or fruit. But yellow-jackets can and do pierce the grape. They will, in cool cloudy weather, cut the cheese-cloth into shreds and go in and destroy grapes or raisins.

RAISINS, AND HOW THEY ARE PREPARED IN CALIFORNIA.

This is the way we clean the grapes for raisins. Theoretically, you are not allowed to touch the bunch at all—except by the stem. When you touch the grapes it rubs off the beautiful white bloom that covers the amber tinge in the White Muscat of Alexandria. Catch your bunch by the stem. Pick off every premature grape; every one that has not come to perfection; every one that is cracked or broken; every one that shows any indication of decay; every one that has been picked by birds; in fact, *any* grape that has any fault at all. Now cut the stem as close to the bunch as possible, and lay it carefully on the tray beside you. This is the whole art of cleaning the grape. These trays of cleaned grapes are carried to one side and placed end to end. The trays are just a yard long and two feet wide. I cover mine with cheese-cloth. The grapes will cure in 12 or 15 days in first-rate raisin weather, under the cheese-cloth. It takes 20 or 25 to cure them, with the best of weather, under the old system—that is, bareheaded. The cloth protects the grapes from dust, dirt, and insects. Woe to the yellow-jacket or bee that gets under that cloth on a warm day. For these reasons the cloth makes a better and cleaner raisin.

In four or five days the beautiful green grapes that you placed on those trays will have undergone a change. You take off the cloth for a hundred—two hundred yards. There, spread out before you, is apparently an immense long line of soft, mushy, rotten grapes. A stranger

to raisin-making would pronounce them lost. If there were in your armor a crack or a crevice he would thrust in one of his arrows of consolation. But, wait! Don't make them into vinegar or sell them to the wine-maker yet. Wait three days—it may be four. Now see the change. The top of the fruit has shrunk downward. The beautiful blue tinge of the perfect raisin has appeared; and, better than all, there is the magnificent bloom of the green grape that disappeared on the second day—come back again to beautify and glorify its old home! Now they are ready to turn. An empty tray is turned upside down on top of the first full one. Both are drawn a couple of feet from the row (to give room to work) and whirled over. Thus the full tray becomes the empty one, and serves to turn the next. When this side that you have just turned up gets the blue tinge, and the bloom is apparent, the raisins are ready for the "sweat-box." This is a box 10 or 14 inches deep, and a little larger than the tray, so that a tray will go down into them. You take your tray, put the open side (one side has no rim) down into the opposite side of the box. As your raisins slide off you draw the tray toward your side of the box, and the fruit will slip in, just as it is laid on the tray. The sweat-box is a misnomer. The raisins do not sweat—they merely equalize. Some are too dry—some not dry enough. They commence to trade off as soon as they get together. In four or five days they are all alike—ready for the packer.

You gave a very good idea of packing raisins, in your Riverside article, when you returned from California. But the fellow who put the bad raisins in the bottom and the best on top was a rascal—there is no getting over that. I do not here wish to represent myself as an extensive producer or packer. I have but a small vineyard. But he who has a small vineyard must understand the business as well and as perfectly as he who has his 5000 acres. If he doesn't he will come to grief.

I see you made a slight mistake in regard to raisins at Riverside. "London Layers" is only a name for the best quality of raisins. It does not indicate that they were either built, brought up, or educated in London. The early packers gave their best raisins this name to indicate that they were fit for the London market. Some pack under the name of Crown, Double Crown, and Treble Crown. But I think that Americans should discard all these imperial and foreign names. New York can eat as good raisins as London or any city in the world—yes, and pay for them too! Why not change the "London Layers" to "New York Layers"? There are really but three grades of raisins. The second grade is simply "Layers." The third is "Loose Muscatels," for cooking.

A great calamity has befallen the raisin interest this year. It commenced raining on the 26th of Sept., and continued, at intervals, for three days. At this time about all the raisins in Southern California were spread out in trays, many of them just fresh picked—some half dry. When it quit raining it was evidently against its will. It wanted to rain—threatened us for eight days more. It was cloudy and murky, and now and then it would take a dash at us at night. The green grapes rotted, and will have to be picked over, at a great loss. The half-dried raisins will be greatly damaged. There will be an actual loss of 100,000 boxes in the southern part of the State.

THE FIRST SECTION BOX.

In a pleasant conversation with J. S. Harbison he informed me that in Oct., 1858, at the State Fair at Sacramento, he exhibited the first section box that ever was made for honey.

Was it the first section box? Is there any section box that has an earlier record? He also informed me that he used the solar wax-extractor in 1860. But he does not know who was the original inventor. Others used it before him. He seems to think it invented itself. His words were, that it came naturally into the head of any bee-keeper. They are called solar honey-extractors here, from the fact that all honey was extracted by them for many years. They are used still for that purpose by many farmers. I have seen them 20 feet long, three feet deep, and four feet across the top. They are made like a trough, and lined with tin. A wire screen fits in, half way down.

Olivenhain, Cal.

J. P. ISRAEL.

Thank you, friend I. I would by all means mark the raisins so that nobody could be misled; and I do not see why *California* layers is not as good a name as any.—I have no knowledge of any sections previous to 1858, and that dates back before I was a bee-keeper, and before we had any journal on bee culture in the United States.

GETTING THE BEES TO EMPTY OLD BROOD-COMBS.

FOWLS' PLAN.

Dr. Miller says he has reduced the time to two or three days. Well, I get the job done in 24 hours, if the weather is warm enough so the bees will fly freely; but if it is colder his plan is no doubt the best where the hives have a loose bottom. If the doctor tries to have old black brood-combs emptied his way when the weather is warm, I imagine he will have a "hot time" taking the combs away, for the bees will hang to the old combs a great deal worse than they will to the unfinished sections; and of all disagreeable work, shaking hungry bees off dry combs is the worst.

As before mentioned, his plan will not do for those who have hives with a permanent bottom, like mine, and I will therefore give my plan, which is simply a slight

IMPROVEMENT ON DR. MILLER'S PLAN OF HAVING UNFINISHED SECTIONS CLEANED OUT.

I take my old combs that I want emptied, and, after uncapping the sealed honey, I put them in empty hives with tight bottoms, and set them down close to the entrance of the colonies I wish to feed, just at dusk. I put in a less number than would fill the hive, so they are spaced further apart; and if I want to feed more combs I put on an upper story. If it is a cool night I put the hive as close as I can to the entrance; if warm, three or four inches off, after getting the bees started on it, the object being to avoid getting the young bees out of their hive.

Nearly all of the honey will be cleaned out in the night, and early next morning I carry the hives of combs two or three rods to one side from the apiary, and close the entrance small ($\frac{1}{2}$ or $\frac{3}{4}$ inch will do); but if combs are new and tender, or contain any candied honey, they should be closed to a one-bee capacity.

Now, the bees that are already on the combs have the advantage through the day, and will get about all the honey there is left; and if they are managed so as to have no young bees on the combs they will all go home at night, leaving the combs free from bees, when they can be taken care of. By this plan I can get a hundred or more combs cleaned out every day until the job is all done with, and the light colonies

supplied with their winter stores, and all without lighting a smoker or opening a hive. I do not work with the bees during this comb-cleaning time; that is, not in the home apiary, where the work is done, and so I have no trouble with robbers.

CHALON FOWLS (*per Violet*).

The following is a private note sent along with the above; but as it contains a "glean of news" we take the liberty of giving it also. Violet's penmanship is as plain as a type-writer, and our printers wish other papas would call upon their little girls in a similar way.

Mr. Root:—I inclose an article. I wrote it today in such a hurry that I could hardly read it, so I got my little girl to copy it. The honey crop is small here. I took only about 1000 lbs., but I am happy just the same, for a "stranger" has arrived at our house; and although he doesn't pay his board, and talks kind o' queer, we have concluded to adopt him; and—well, you know how it is yourself.

Oberlin, O., Oct. 24.

CHALON FOWLS.

ERNEST'S NOTES OF TRAVEL AMONG THE BEE-KEEPERS OF YORK STATE.

BICYCLING OVER THE MOUNTAINS TO ALBANY.

The next morning Mrs. Root took the stage for Hunter, at which point she was to take the train to New York, to meet her sister. In the meantime I donned my bicycle suit, oiled up, and stood in readiness to take a fifty-mile run to Albany. It had rained furiously on Sunday, and the roads were not in the best possible condition. With some misgivings, Mrs. Root bade me good-by, and off I started. I made pretty slow progress. Instead of going down to the Hudson, and following the river up, I decided to take a shorter run across the country. I had gone hardly five miles before I almost had a notion to turn back, as the roads were so muddy that, in several places, instead of the bicycle carrying *me*, rather than get it all mud I picked it up and carried *it*. I traveled along in this way until I came to a pedestrian. Some of the time he was away ahead of me and some of the time I was up even with him, and it was somewhat humiliating to be plodding along at that rate, knowing that fifty miles or so were ahead of me. I thought that, when I got to the top of the mountain I would sit down and coast all the way. I arrived at the top, and, behold there was another magnificent view; but as I have exhausted all my vocabulary of adjectives, I can not stop now to tell you about it. I commenced coasting, and all was very fine for a while; but the road grew rapidly stony and rough, and it seemed to get steeper and steeper. The brakes would hardly hold me, and some places were so rough that I had to dismount and hold the machine back. I never had the attraction of gravitation torment me so much as on that ride from Mount Pisgah. It was a continual pullback all the time. On the way a stone caught under the guard, and I thought sure then that the machine was utterly smashed. I stopped and cleaned the mud out, reached the stone, scraped out the guard, and away I went.

There was nothing particularly attractive on this road to Albany, except, perchance, the mud. Like the same article in Ohio, it would stick to the wheels, get under the mud-guards, and whenever I dismounted it would cling to my feet. The roads seemed to grow worse and worse. So rough and stony was the land that

agriculture seemed to be developed but little beyond its primitive form. I saw log houses and ox teams. Here and there were box hives; and one place I remember in particular had in its front yard from forty to fifty skeps. I thought of turning in and asking the owner of those bees a few questions. Possibly he might give me an idea or two; but every thing was so dilapidated, house and all, that I decided to go on. I was traveling at a pretty fair rate, when just back of me I heard a low growl, and the rapid patter of feet. Looking back I saw it was one of those

LARGE FEROCIOUS BULLDOGS.

He had come from the yard where I saw the box hives, and he was after me full tilt. Unfortunately the road was rough, otherwise I could have left him in the race. I put on all speed, however; but, despite all I could do, the dog was coming nearer and nearer. I felt every moment that he would grab my stocking legs, and the cold chills crept up my back. I never had a nightmare that was more real. I was thoroughly frightened, and I longed for a weapon of some kind. Something that I could not do ordinarily I did this time. While the wheel was in full motion I whirled about in the saddle, and, with heels sticking out behind, kicked out back. I ran into an obstruction, and the next thing was bicycle, rider, and dog, pretty badly mixed up. I was on top of the bicycle, and the dog on me, and I thought my days were ended. Although on my back, I grabbed for his throat, and kicked lustily with my feet. The dog was evidently as much or more surprised than I, for the next thing I knew, he was running for the box hives, with his tail between his legs, yelping as if the evil one were after him. I picked myself out of the mud, and, with a stick, scraped that article off. I mounted the saddle again, and at the next house I came to I stopped for a drink of water. A good-natured farmer came out, and, observing my dilapidated condition, asked me whence I came and whither I was going. I told him, and then related the squabble I had had with the dog, and desired him to convey the intelligence to the owner of the box hives, that, the next time I came along that way, I would surely kill his dog. As I never expect to travel the same route again, the dog will probably not die by my hands.

Perhaps I might say here, that one of the things that annoy bicyclists along the country is good-for-nothing dogs whose chief business is to annoy passers-by, and who seem to have a particular dislike to bicyclists. This is not the first fracas that I have had with dogs. In one other instance, one of a ferocious type actually grabbed me by the calf of my leg, and hung on. I was at my wits' ends to know "what to do, and how to be happy while doing it." A thought struck me on the instant. Turning to the dog I said sternly, "Jack, go back into the house, sir! Go back, sir!" It was quite evident that the animal had heard this before. Letting go he looked at me as much as to say, "Well, may be I have made a mistake," and back to the house he went. Usually, when the roads are fair I run away from them. If I have a fair start, it is a pretty good dog that can even catch up with me.

But, to return. I wearily wended my way over the bad roads, until I reached the suburbs of the old city of Albany. A man passed me, and said, "They are waiting for you in the city."

"Who?" said I. "Bee-keepers?"

"Bee-keepers!" said he in surprise, and we both passed on, neither knowing what the other meant. I had supposed that he meant that

there were two or three bee-keepers in Albany who expected me that day, and that, when I came, we would go into camp at Lake George. He, in turn, meant that a company of wheelmen were on their way to Syracuse. There was one important member, as I afterward learned, whom they were waiting for; and supposing me to be that individual, he thought he would hurry me up. I had gone very nearly fifty miles over roads that were hardly passable for even a lumber-wagon, and I had taken nearly all day to do it; and, to make matters still worse, the streets of Albany were the worst paved of any I ever came across. I dismounted, and pushed my wheel on the sidewalk. A burly policeman, with his club up-lifted, very respectfully advised me to get into the road, with its muddy and uneven places. I complied. I soon reached the hotel, and took lodging.

AT THE CAMP OF BEE-KEEPERS ON LAKE GEORGE.

The next morning, about 9 o'clock found me in the city of Troy, the place where they make collars and cuffs by the carload. After visiting with friends and relatives, I left my bicycle in the city, and took the train for Lake George, which I reached that afternoon. My friend F. A. Lockhart, of Pattens Mills, near Lake George, was on hand at the Depot. A couple of lady bee-keepers, Miss Douglas and Miss Wolcott, came on the same train. I went to the hotel, and the two ladies went with Mr. Lockhart to the camp. The next morning Mr. Lockhart came after me, and very soon I had the pleasure of meeting Rambler. Yes, if I had not been told so I should have known that good-natured, rather tall individual driving a black horse. Then there was Mr. Lockhart's father, one of those pleasant, hearty Scotchmen that it is a pleasure to see. There was also John H. Larrabee and his brother; Mr. and Mrs. G. H. Knickerbocker, Mr. Higley, and several others whose names I have forgotten.

Mr. Lockhart, Sr., owned a cottage along the shore of the lake; and as the attendance at the camp was not large, the tents brought by Rambler and "genial John" were not used. We accordingly all of us took up our quarters in the cottage. There was just enough to make a good-sized family, representatives from Vermont, New York, and Ohio. A couple of row-boats were at our disposal, so that we could take rides upon the lake; and, in addition to that, a small steamer, rebuilt by a son of Mr. Lockhart, of queen-rearing fame, came around both days to our camp. In addition to this there was fishing-tackle, and every thing else in the sporting line, that could make such a camp delightful, to say nothing of the beautiful scenery round about. The boys had been out fishing that day, but succeeded in catching only four or five small minnows; and during the time I was there, no large fish were caught.

We talked bees, we talked bee-keepers, and I should not be surprised if we indulged in a little gossip, not only at each other's expense, but at the expense of some who were not present. We visited as only bee-keepers can, until late in the evening. The ladies of the party retired at a *reasonable* hour, but the rest of us had not finished talking yet. As in almost every crowd like this there was one comical genius (Brodie Higley by name) that, no matter what he said or did, we had to laugh. Rambler has spoken of him as the bee-keeper who attempted to winter his bees on wagon-wheels; see GLEANINGS, page 635, 1888. It was growing late, and our friend Mr. Higley could keep awake no longer, and finally, in an upright posture, he went off into a doze, while we talked and

laughed. As he leaned back in his chair, his appearance was exceedingly comical; and, no matter how hard we laughed, the sounder he slept. A thought struck me, and I proceeded to put it into execution. I brought all the lamps we could spare, so as to get a good illumination on the face of our friend, and I was just then quietly poisoning my camera, that I might have a permanent record of his face—his mouth wide open, and he himself enjoying all the bliss that sleep can give, when, lo! he suddenly roused up and glared at the camera. He did not see any thing to laugh at, although the whole crowd of us fairly yelled. Pretty soon he quietly retired to a corner of the room, and was soon fast asleep. Not long after, the whole of us retired, it being my happy lot to sleep with the Rambler. The next morning I got up feeling any thing but refreshed; my sides were sore from laughter of the previous evening.

A RIDE ON A BEE-KEEPER'S STEAM LAUNCH.

That day our crowd was invited by the Andrews to take a ride upon the little steamer—an invitation which we gladly accepted. I took along my Kodak, and took photographs of several of the mountains. To give you just a fair sample of the beautiful scenery, I give you one of the instantaneous views herewith.



A VIEW ON LAKE GEORGE.

I stood up in the steamer, and the view taken shows a part of Mr. Andrews' hat, and, I think, a corner of Mr. Larrabee's face. You can see that the shot was instantaneous, as the ripples and the waves are apparently motionless.

We visited most of the principal points at that end of the lake; stopped at Mr. Andrews' cottage, romped about a while, and finally returned. It was suggested by one of the party, before leaving the steamer, that we have a photograph of it taken. Both Rambler and I tried our hands at it, but neither succeeded in getting very good views. Then after the party left the steamer they stationed themselves on the shore, and we both took a shot. There was a sort of spring-board on the end of the dock. In order to take in the whole crowd I had retreated clear to the end of this board, and the water beneath was perhaps 15 feet deep, and as clear as crystal, as is the character of the whole lake. I had stepped just one step back too far and came very near taking a plunge bath—camera and all, and after a good deal of wiggling I regained a upright posture. The crowd on the shore were in the height of their

hilarity at my expense, when at that instant I secured a photograph. The place being a little shady and dark, the picture is not clear enough to reproduce; but I never saw broader grins on the faces of a party than are shown in this little miniature photograph. That afternoon we went out in a row-boat, and we were shown a place where a certain man-of-war was sunk during the French and Indian War. The water is as clear as crystal; and when the lake is still enough, I am told that this old relic of our forefathers can be seen at a depth of 40 feet.

That afternoon I was obliged to leave, although some good fishing was promised me if I would stay. The rest I will leave for the Rambler to relate, which he will do in a forthcoming article soon.

To be continued.

PURE ITALIANS VS. HYBRIDS.

DR. C. C. MILLER VOTES IN FAVOR OF ITALIANS.

Like yourself, friend Root, I was a little surprised at the answers on page 752 to the question whether pure Italians or hybrids would do a better season's work. And now, upon making a careful canvass of the replies, I am again surprised to find my first impressions were so far from correct. The impression left on my mind, after reading the replies, was that the general consensus of opinion was that hybrids are better for work than pure stock. Instead of such being the case, I find that, of the sixteen replies, aside from my own, seven prefer Italians, four prefer hybrids, one thinks there is no difference, and four are non-committal. Having kept bees solely for the sake of having the honey to sell, I have never cared for color, whether yellow, black, or green, only so they gave me the most honey. The reports of others settled me in the belief that hybrids are just as good workers as pure Italians; but every year or two I got an imported queen for the sake of infusing fresh blood. Most of the queens I raised were daughters of these imported queens, but for the last two or three years I paid less attention to the matter, leaving the bees to a great extent to raise queens to suit themselves. As I had for so many years been bringing in imported queens my bees were all either pure or hybrids, and the few bees surrounding me would be pretty well Italianized. Not rearing queens for sale, and believing that hybrids would give me just as good results as pure Italians, why should I trouble myself any more than to throw in a little fresh blood now and then? The yellow blood being in the ascendancy, I could reasonably expect it to remain so, even if I never got another imported queen; and by bringing in a fresh imported queen every year or two, the black blood ought soon to work itself all out. But I was surprised to find the number of very dark hybrids on the increase—a good many of that sort that kind of hang along without getting ahead much, and allow the worms to take possession—and in 1889 I actually found two or three colonies that no one would suspect of having any yellow blood in them—pure black. I also found that, instead of wearing a veil on my hat, to be pulled down only occasionally, I had gradually come to wear my veil down all the time.

In the A B C. friend Root speaks of the vindictiveness of hybrids. In my comments thereon I say, "My hybrids do not and never did deserve the reputation you give them. Perhaps one in two hundred may, and then a queen loses her head." But the "one in two hundred" became quite a number in one hundred,

and there were times when I dreaded to go near them.

One day as I sat working at a hive, having had a little more than the usual quota of stings, I looked up from my work, and, with suppressed groans (and, I presume, with unsuppressed lugubriousness of countenance), said to my assistant, "If I knew that this thing were to continue straight along in this way, I think I should want to give up the business." Instead of giving me the hearty sympathy I had a right to expect, she merely looked at me and laughed very heartily. To this day I don't know just what she laughed at. There was nothing funny about it.

In that same summer of 1889 I had a good illustration of how much trouble some people will take to avoid trouble when a pet theory is involved. I had a visitor whom I will not name, further than to say he came from Medina, and was somewhat barefooted on the top of his head. While among the bees I urged him to put on a veil. Not he; it was too much trouble. Do you know that, all the time that man was among the bees, he spent his whole time blowing a smoker about his head, puffing first on one side then on the other. If he had been obliged to work at a hive he would have taken a good many stings, or else would have taken to his heels.

However well he stuck to his theory, I had to give up mine. I concluded hybrids were not as good for me as pure Italians. However good a first cross may be, if such are encouraged they are sure to be followed by second, third, and sixteenth crosses, among them such crosses as *are* cross and very poor workers. So this last summer, wherever a colony showed the least taint of black blood either in color or disposition, the queen of such colony was remorselessly destroyed and replaced with one of pure origin. This brought death into some of my best colonies. The queens were killed, not because of what they were, so much as because of what might come after them. As a general rule I am kept too busy to keep close track of the qualities of each colony; but in one case I did give close observation. I had an imported queen whose workers, in appearance, pleased me less than any I had ever had. This led me to watch narrowly their conduct for some days, to see if they were any more industrious than others in the same apiary. There was no mistaking it; there was not only a difference, but a marked difference. Especially in the morning was this noticeable, for no other colony in the apiary sent out so strong a force, although some were more populous.

Hereafter, if a colony of hybrids be found among my bees it will be by no design of mine.

Marengo, Ill., Oct. 22.

C. C. MILLER.

Friend M., if you had had decent bees, instead of the kind you did have, I should not have needed a bee-veil or smoker either, at the rate your bees were getting honey during my visit. Very likely that is your opinion, as well as mine, so we can drop it right there.

A WINTER REPOSITORY.

PLANKS FOR CEILING BOARDS.

I have recently built a bee-cellar which I should like to describe, and have an expression of opinion from yourself and others as to its wintering qualities.

My apiary is situated in a valley and near a small swamp. The soil is sand and gravel, and there is just enough rise so I could dig down

A VALUABLE LETTER FROM CUBA.

CUBA VS. CALIFORNIA.

Friend Root:—As so many readers of GLEANINGS have written me about Cuba as a bee-country, I can do no better than answer through its columns, so that all can have a chance at the same dish. It would be quite impossible for me to mention all the advantages and disadvantages in one paper. One writes, "How does it compare with California?" In some respects there is a similarity—that is, in the amount of honey, for instance, that is often secured from a given number of colonies; but then, there is a want of comparison, too, for California of to-day is not what it used to be for honey-producing, as the fruit and vine industries have made such rapid strides in the last ten years that the bee-ranges in many of the honey-producing counties have been turned to vineyards and orchards, while here there is nothing of the kind. The hand of push, of progress, of go-ahead, that is bound to succeed, the hand that has characterized and stamped the American people as the most energetic in the world, is crippled here—broken, as it were. Not a muscle moves in the direction of "get there on time." But the natural resources remain almost untouched by the hand of man, and they are something wonderful. As an evidence, I will say that, while the last year has been the poorest for honey I have ever seen here (on account of so little rain), yet our 550 colonies have passed through the dry season (or dearth of honey) with very little help. We have fed only ten pounds to the colony; and had it not been for the fact that we had 300 new colonies to make, I do not think we should have had to feed half that amount.

Bee-keeping here requires attention. To care for 550 colonies in California is only pastime compared with here, and the whole United States is the same. There is some season of rest for the bee-keepers, but here there is not. From November until March is our surplus season. Well, there is no rest about that. Then comes requeening, and the making of new colonies if you have any to make. The hot weather is then upon you; and if there are any queenless colonies that are at all weak, the moths will probably eat up the combs; and I want to tell you that it takes a pretty strong force to stand off the moth in this climate, where it never freezes, but "eternal vigilance" will keep them out.

Any one, to keep bees here successfully, must attend strictly to business. There is no time to go visiting, to hang around the corner grocery, or to sleep in the day time, but work and watch 365 days in the year, if there is no church to go to on Sunday, and there is not here. But for all the care necessary to success here, is it any worse than the life of the merchant? If he succeeds he must tend to business. How would it be with you, friend Root, if you or some competent person were not on duty all the time? How long would your business be self-supporting? I guess not very long. The same with bee-keeping here. It will pay if attended to. You don't see me running up the white flag. I tell you, that, if I do not succeed, it is my own fault. The conditions necessary to success are here; and if I do not avail myself of those conditions I have no one to blame. Of course, there are some requisites necessary to success, such as the right strain of bees, hives, fixtures, etc., suited to the wants here for a large business; but the bees, the right strain, are very important. We have the best results from the hybrids, one and two bands.

One correspondent asks, "What is the cost of starting an apiary of 550 colonies there?" That

is a hard question to answer. This establishment cost \$10,000. How much cheaper one could start such an apiary would depend upon the man's ideas of what is necessary. There have been some apiaries started here that I presume did not cost \$1000; but I think they have never amounted to much, or, at least, I have never heard that they did. If I start more apiaries it will not be with a view to see how cheap it can be done, but how complete an establishment for the care of 600 colonies can be made to successfully care for all the details, with as little help (man power) as possible.

There was one young man wrote me for my opinion of the two sections, California and Cuba, for bee-keeping, and gave his address as Orange Co., Florida, no postoffice. I could not answer with such an address as that. The letter would only go to the dead-letter office.

You will remember I told you last spring that I had a 5-to-1 gear for my Stanley extractor. Well, I have it now, and it works like a charm. When, before, the operator had to make his hand go around so fast, in order to properly dry the combs, that it was very tiresome indeed; and even then it could not be done to suit me. Now, it is no trouble with the 12-inch crank. You move the hand around slowly and deliberately, and the baskets are traveling as though they were afraid they would miss the train. The throwing-out of the honey now is a pleasure, while before it was a task that but few had the strength to perform. Yes, it starts a little harder; but when in motion there is no difference; but the difference in starting is more than made up by the slow motion at which the crank passes around. I shall do nothing wrong if I say to every one thinking of coming to Cuba to keep bees, that, if they wish to come, there is nothing in the way; that there is plenty of territory that is not occupied, and, in fact, the best part of the island, for bee-keeping, is still open, to be occupied by whoever wishes. With attention, more money can be made from bees here than in the United States; but let no one forget that there is no season of rest, from one year's end to the other, if he would do justice to the business, and make it pay. Many object to sticking so close to bees. That is all right; such people are not obliged to stick to bees. As for myself, I like my business, and I like to attend to it, and I have yet to see the business that thrives when it is neglected. The business is so unlike what it is in the United States that people fail to understand the difference without experience (and some not then). Here, in order to make the business pay, we are obliged to keep large apiaries; and, with large apiaries, the per cent of loss from colonies getting queenless is great; and if left queenless only a very short time, the combs are destroyed by moth, and many other little things that contribute to loss, where there are five or six hundred colonies together, that would not happen with a few colonies. All details need the closest attention. But with all the objections that come up against the large apiary I will take it every time, and give the one my best attention, rather than have five or six little bunches located in as many different places, as long as there is plenty of forage in one locality for the whole. This is the 23d of October; and with 550 colonies here in one apiary, the best are storing honey right along, and we are taking it away—a thing I never did in October before in Cuba, and you will remember that this is not one of the months we expect our bees to store surplus. This has been a very poor year. The Cuban bee-keepers in this locality have lost most of their bees. Very little rain indeed.

A. W. OSBURN.

Punta Brava de Guatao, Cuba, Oct., 1890.

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

QUESTION 172. *Which will do the best work—a colony allowed to swarm (counting in the work of the swarm), or one kept from swarming by having its queen caged or removed?*

I believe one allowed to swarm.

Ohio. N. W.

A. B. MASON.

In an average season, one allowed to swarm.

Illinois. N. W. C.

Mrs. L. HARRISON.

The colony allowed to swarm, if managed right, I think will give the best results.

Ohio. N. W.

H. R. BOARDMAN.

This depends. I should usually prefer no swarm if the colony kept actively at work.

Michigan. C.

A. J. COOK.

A colony kept from swarming does the best work, every time. But I want no queen caged nor removed.

Ohio. S. W.

C. F. MUTH.

The one allowed to swarm, if managed right. The management to keep from swarming is why the latter is not so good.

New York. C.

G. M. DOOLITTLE.

Ordinarily, where the working season is sufficiently long to allow the swarm to get into good working order for the main flow of honey, the swarming colony is best.

California. S.

R. WILKIN.

We are opposed to natural swarming, but we do not cage nor remove the queen. We give our colonies empty combs to prevent swarming. But the hives generally used in this country are too small for such a purpose.

Illinois. N. W.

DADANT & SON.

If there is a heavy fall crop, the swarmer might do best. In my locality I would risk the one made queenless, but I'd much rather risk one with a queen, if it took no swarming fever all summer.

Illinois. N.

C. C. MILLER.

I think the colony without the swarm. Use a hive large enough to accommodate the increase, and give them all the room to work in the one hive, with all the combs they can use for honey and brood, and then extract.

Wisconsin. S. W.

E. FRANCE.

That depends on what is meant by the "best work." If the question means what it says, the former. If the *most* work is meant, that depends on the season, locality, character of honey flow, etc.

Illinois. N. C.

J. A. GREEN.

This is a knotty question. I can't answer it, as there are so many variations in seasons and localities. I have experimented much in this line, and am not fully decided yet which is best. I hope to learn something this year more definite.

Vermont. N. W.

A. E. MANUM.

All depends upon the locality; that is, on the time of blooming of such flowers as you depend on for your surplus crop. I think that is the rule in most localities (counting the value of the increase), that the increase method is the

best. Now, remember I do not say this to any person having a practical, mechanical method of preventing increase which is safe and sure; but as no one has, so far as I know, I will let the answer stand.

Michigan. S. W.

JAMES HEDDON.

That will depend on the season and pasturage. If white clover is the only source of surplus, it is possible that the colony that does not swarm may gather the most honey; but if the honey season is a long one, with a favorable place for fall flowers, the colony allowed to increase will be far ahead.

Wisconsin. S. W.

S. I. FREEBORN.

I do not believe in caging or removing queens to prevent swarming. It has always seemed to me like adopting a worse evil than the one we fly from. For extracted honey we find there is no necessity for removing the queen. If running for comb honey, we would allow the swarm to issue, and manipulate so as to give the new swarm all the working force.

New York. E.

RAMBLER.

This will depend on circumstances—principally on the honey harvest, whether early or late, and whether you remove and return the queen at the proper time. Caging the queen in the hive is a lazy substitution, and will not kill the swarming fever. I have said that a swarm without a queen would work with greater energy than one with a queen, but having a desire to swarm. I repeat this, because I have been misquoted.

New York. C.

P. H. ELWOOD.

I do not practice the method referred to, and therefore can not say how far it succeeds and how far it fails. I suppose, however, that the relative crops of colonies which do not swarm, as compared with colonies that do swarm, and colonies that are divided, is what the questioner is after. Where the surplus season closes early in July, the most may be expected of colonies not increased—yet with many exceptions. Where good heavy runs in August and September occur, the most may be expected from colonies that increase. One year of my bee-keeping, the yield per colony was three times the usual average. That year I increased 17 colonies to 72. The best yield was from a colony made into seven by division—they raising their own queens.

Ohio. N. W.

E. E. HASTY.

These answers are interesting, and I believe P. H. Elwood hits the nail on the head when he says that a swarm *without* a queen will work with greater energy than one *with* a queen having a *desire* to swarm. Granting that bees will work more energetically after they have swarmed, and are in their new home, it is very possible that the same bees have lost time just preparatory to swarming, and while the swarming impulse was upon them; and Mr. Elwood's point is, that, if it should be taken away from them entirely, they will average better. This is an exceedingly interesting and practical question, and if swarming can be controlled in some such way in out-apiaries, as Mr. Elwood and Hetherington do, it means that we can dispense with hired help to watch them, or, in the absence of such help, the loss from runaway swarms.

E. R.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

JUST AS MUCH HONEY STORED ABOVE THICK-BARS AS ABOVE THIN ONES.

Well, Uncle Amos, I have come to tell you about my thick top-bars, as I agreed to at the close of the season. I have taken off all the supers on the 29 hives that I told you about in August GLEANINGS, page 602. The different top-bars on the 18 hives that I spoke of in the same article do not satisfy me at all, so I will say nothing about them, only that they were a failure so far as preventing burr-combs is concerned; but with top-bars $\frac{3}{16}$ thick and $\frac{1}{8}$ wide, and spaced $\frac{1}{16}$ with the furniture nails, has given me entire satisfaction. There was not a particle of burr-comb, except on two of the colonies, and only a very little on them.

In your foot-note you ask me whether the colonies with thick top-bars stored less honey than the colonies with thin top-bars. Well, I am sure that I could see no difference. It is my opinion, from what experience I have had, that, if the colonies were strong, and there were a good flow of nectar, the top-bars, or even the honey-boards, would make no difference in the amount of honey stored.

On page 659, C. C. Miller wants to know whether there isn't danger of running fixed distances to extremes. I wintered two colonies last winter on their summer stands, with this close spacing, and they were in as good shape in the spring as any I had, and gave me good strong swarms. I use a device similar to the Hill, covered with burlap and chaff cushions. One thing that Dr. Miller speaks of is to tip the hive up and look at the bottom-bars to see how irregularly they are spaced. This is a point that we certainly have got to overcome if we use close spacing. I have been very particular to have my frames hang so that the spacing would be the same at the bottom as at the top; but I find that I have one frame in one hive that got a little out of "whack," and, as Dr. M. says, there was no brood reared on one side of the frame; but if I could get some of those wires that Dadant & Son describe, bent to fit my frames, I think they would fill the bill.

Maple Ridge, Mich., Oct. 21. FRED C. SMITH.

THE DOVETAILED AN OUTDOOR WINTERING HIVE; HOW IT MAY BE DONE.

Friend Root:—I am using a hive for wintering on summer stands, that I think is ahead of any thing I have ever seen, for reasons you will readily understand without explaining.

I use the common Dovetailed hive, and line each end with building-paper. I have the blocks and thumbscrews in the hive exactly like the Heddon. I use, also, eight closed-end frames, and hang them.

To prepare for winter I remove two combs and insert chaff dummies, one on each side, and screw up the thumbscrews tight. I have the closed frames pressed together tight for one end, wall-paper lining between them and the hive-walls. The chaff dummies are fitted tight to the end of the frames by pressure with a dead-air space between the dummy and hive-wall. A cushion laid on top of a Hill device, furnishes the winter preparation. Your bees are snug and warm for winter, and how they will build up in the spring! Now, this is good; it is cheap; there is no loose packing nor clumsy hives.

CLOSED-END FRAMES HANDLED AS EASILY AS ANY.

I would not use a hive without closed-end

frames. Objections to them have been made by men who never tried them or did not know how to use them. The closed-end frames have so many advantages that they will never be laid aside by any man who knows how to use them; and when hung from above, a man must be very careless or ignorant if he kills bees in manipulating them. I know this hive and closed-end frame is a good thing, and seems to be about what Ernest is trying to get at, so I send this description, hoping that it may be of some service to him in his search for a summer and winter hive. J. RICHARDSON.

Moberly, Mo., Oct. 6.

Friend R., the plan you give has been given over and over again through our journals, especially years ago, about the time chaff hives were first inaugurated; but although such protection is a good deal better than none at all, during very severe winters the results have not been equal to such protection as was given by the chaff hive, or something equivalent to it. Of course, closed-end frames would be an advantage with such an arrangement.

PERFORATED ZINC FOR EXTRACTING, A SUCCESS.

Last year (1889) my bees swarmed a good deal. I hived them in 8-frame L. hives. They built, on an average, $1\frac{1}{2}$ to 2 frames of drone comb in the bottom, and nearly all drone in top story. I had no combs or foundation to give them, and they raised solid sheets of drones, at a considerable loss of time and honey.

This year I went over the yard, fitting in worker combs in place of drone in the brood-chamber, placing the drone comb in the second story, with a sheet of perforated zinc. Root's make, between, on 28 colonies. On looking them over soon after, I found two queens above, which I put below. One of the queens I found above, two or three days afterward. The others all worked well, very few drones below. In some hives the bees would clean out a part of one or more combs (drone) in upper story for the queen to lay in; but when honey came in fairly they would fill it up. In a few of the sheets the perforations were partly filled with wax; but combs in the upper story were not fastened down to the zinc where a $\frac{1}{16}$ space was used. I believe they are just the thing for hives for extracting, especially where the bees build all their comb; and they will pay expense and trouble of adapting them to the hives in one season's use.

KEROSENE FOR PROPOLIS, ETC.

I think the best and handiest way of getting propolis off the hands is to have a small can of kerosene handy. A few drops will "cut" the gum very satisfactorily. It is also good for rusty saws, etc. By running the bottom of the Benton queen-cage over a cutter-head, cutting $\frac{1}{16}$ deep and to within, say, $\frac{1}{8}$ of each edge, and tacking on a strip about $\frac{3}{8}$ thick by width between strips and length of cage, using about $\frac{3}{8}$ wire nails, the said cage can be used to introduce, the same as a Peet cage. To take off the bottom, pry up the bottom $\frac{1}{16}$ inch, using a stout knife; push the bottom back, when the nails may be easily pulled out. The strip or (bottom) will slide easily between the side strips, and may be used and put on the combs the same as the Peet. While, if any prefer to introduce by the candy plan, there is nothing to prevent by making cages this way; the wire cloth and top may be nailed on, and the bottom left until after the queen is caught before fastening. This idea may be old; but I, at least, have not seen it. Port Orange, Fla., Oct. 14. JOHN B. CASE.

WATER FOR BEES; HOW TO MAKE THEM LET YOUR NEIGHBORS ALONE.

I will come to your and Mr. John Burr's relief about giving bees water, page 713. To keep bees from bothering your neighbors and yourself, and at the same time give the bees just what they want, give them salt water. As soon as the bees commence to fly and breed up they require salt; and I *know* if it is properly applied it will cure such diseases as foul brood. For watering bees, fill a nail-keg nearly full of sawdust; set it on a grooved board, with cleats nailed at each end to keep the water from running out. Place the keg one foot or so from the ground, under the eaves of some building in a warm and sheltered place. Throw in a handful of salt every other day; and if it does not rain, turn two or three quarts of water on the salt. In dry weather they will take more water; and if you have never tried it, or something of the kind, you will be surprised how many bees will work on it at all times of the day.

Bees go into winter with plenty of honey, but of poor quality. Look out for a loss this winter in New York. I have 600 packed for winter now. W. L. COGSHALL.

West Groton, N. Y., Oct. 4.

SPANISH NEEDLE AS A HONEY-PLANT.

Within is what is called here stickweed flower. This is not more than half of the top in length. I had to cut them to suit my box. These were gathered right after a hard rain. The bees were thick on them when I gathered them. You ought to be here to see those black bees hustle out before daylight, and come in so heavily loaded they drop all around the hive. Please give me the proper name of these flowers. I will send you some seed this fall. They commence to bloom about the 20th of August, and last until after frost, up to October.

Brush Creek, Ky., Sept. 10. D. H. WEBB.

Friend W., the plant you send us is the well-known Spanish needle—*bidens*. In localities it furnishes great quantities of honey. We have had no report before that bees worked on it directly after a heavy rain. It must be yielding tremendously in your locality. It has been said, that a bee-keeper should locate where there is very rich soil and very poor farmers, in order to get honey from this plant, for its favorite place is poorly cultivated cornfields. See what is said elsewhere about Spanish needle on the rich river-bottoms of the Illinois and Mississippi Rivers.

THE DOVETAILED HIVE; HOW TO MAKE A WINTER HIVE IN KANSAS.

Having just begun last spring to learn to take care of bees, and having purchased 10 colonies in Dovetailed hives, I have been watching for instructions for wintering. In this latitude there is so much mild weather that it would be difficult to keep a cellar at the desired temperature for bees. Then, too, there is sometimes extremely cold weather for several days, followed again by warm winds. I do not like the thin-shell idea of strengthening the credit of the Dovetailed hive—not if the thin shell is put on the outside; but to place thin followers on each side, inside the hive, and a chaff cushion on top, is about the simplest thing to do. The A B C book says four to six frames are enough; and even if seven frames are left, there is room for a half-inch follower on each side. This is just what I settled down to: I removed one or two frames from each hive; and to those needing more supplies I uncapped one or two frames of

honey and hung them over night in the second story, just drawing back the burlap at one corner, for the bees to get up. They did not fail to carry it all down in a single night, and a frosty night at that.

I have 13 colonies in the Mitchell hive, which is 25 inches long inside, and deeper than the Dovetailed. I shall cut these back as soon as I can drive the bees next spring into Dovetailed hives. They will make nine-frame hives, leaving room for a follower. I exhibited a Dovetailed hive at our county fair, and I learn to-day that it took the premium. EZRA YODER.

Paola, Kan., Oct. 21.

LETTER FROM FATHER LANGSTROTH.

Dear Friend Root:—In reply to your letter, inclosing a check for \$50, sent to me by request of the N. A. Bee-keepers' Association, recently held at Keokuk, I would return my sincere thanks for their very kind and helpful remembrance of their old bee-keeping friend. I am still in a feeble and suffering condition, although much better than I have been for nearly two years. Thanking you for your many acts of kindness in the past, I remain

Yours affectionately,

L. L. LANGSTROTH.

Dayton, O., Nov. 7, 1890.

CALIFORNIA ROBBER-FLY.

I regret to say that the sand-bees and mosquito sent by J. C. McCubbin, Selma, Cal., were ground to powder, and so can not be identified. I wish all would send insects in strong boxes, tin or wood, wrapped in cotton, then they come in good condition. A small tin box, like a cap-box, will go for a cent.

The large insect which was carrying the bee is an asilus fly, new to me. I wish it were not broken. It is one of the robber-flies. I have illustrated several in my *Bee-Keeper's Guide*, from which figures this could be easily identified. These bee-killers are usually gray and sober colored. This one is ornamented with brown, and is quite handsome. I should like very much to receive a perfect specimen. There are several of these bee-killers in the South, and it seems that California is not exempt. I hope that Mr. M. will try again, when I shall hope for better success.

BATS.

Mr. Thaddeus Smith, Pelee Island, Lake Erie, Ont., Can., wishes me to name a bat which he sends me. This bat is large, quite whitish, so that it is called the hoary bat. The scientific name is *Vespertilio pruinosus*. It is not very common, and is easily told by its whitish appearance, and a yellowish band across its throat. I was glad to get the specimen, as we had none in our museum. Bats often collect in great numbers in caves, where they domicile in summer and hibernate in winter. Bats are nocturnal, and feed on insects; so they are our friends.

CROWN BEARD.

Mr. Lewis K. Smith, Gainesboro, Jackson Co., Tenn., writes me regarding a plant which he says grows abundantly in his vicinity. The bees gather most of their fall crop of honey from it. He asks for name. I have never heard of this plant as a honey-plant before, I think. It is crown beard, or *Verbesina occidentalis*. It is closely related to beggar-ticks—*bidens*—and wild sunflowers. Indeed, it is next to the *Actinomeris Squarrosa*, which is much praised as a valuable honey-plant in West Virginia. No wonder that it affords honey. Many of its near relatives do so.

A. J. COOK.

Agricultural College, Mich., Oct. 27.

OUR HOMES.

Call unto me, and I will answer thee, and show thee great and mighty things, which thou knowest not.—JER. 33:2.

The question oftentimes comes up, "Have we a right to expect that God will answer us when we come to him in prayer, asking him to direct us in regard to some matter on which we are undecided?" We often feel at a loss to know just exactly where duty calls us, or, in other words, we wish to know just what God would have us do in regard to certain things. This matter has been on my mind more or less through all my experience as a Christian; and sometimes I have not only been puzzled but considerably troubled because those who seem devoted and willing make sad mistakes. In looking back through my own experience I have, however, been led to decide that, where we go to God in prayer about a thing, and then make a mistake, the fault is ours, and not that of the Judge of all the earth, nor is any thing amiss with any of his promises in his holy word. We are very anxious to do a thing. We pray over it, and then watch for some indication that God approves of this very thing. We delude ourselves in the belief that we have prayed over the matter in question, and that God said it was right, whereas *inclination* swayed our better judgment to such an extent that *self* said it was right, and not the promptings of the Holy Spirit. The trouble is, even while we prayed we were not in a spirit of entire submission to his holy will. We should be very careful in such matters. The attitude of our heart should be, "Here, Lord, am I, ready to obey, and listening for that still small voice to direct me. I am willing to sacrifice property, to bear toil and pain, if I can only be sure that such a course is exactly what thou wouldst have me to do." After having done this we need to be very careful that we are entirely submissive and unbiased. We need to be sure that our inclination does not at all enter into the final decision. If we do this, I am sure the promise in this little verse of our text will be fulfilled, and that we shall seldom if ever have just cause to regret taking the course we did.

When the time came around for the International Convention, it seemed almost folly for me to think of deserting my post. Our new factory was just roofed. The doors and windows were not in. Machinery was to be located, and important matters were to be decided, not only day by day, but hour by hour. Things were to be located that would be exceedingly hard to move if a mistake were made. Expensive men were on the ground waiting to be directed. How *could* I be gone five full days? I decided, for a couple of weeks before the time appointed, that it was not my duty to go. A good many would be thrown out of employment if I were absent. In talking with my pastor about it he gave me an idea, that at first I accepted as a jest or a piece of pleasantry; but afterward I decided there was an important truth in it that I specially needed. His suggestion was something like this: "Why, Bro. Root, you can solve the problem this way: Let your men have a vacation while you are gone; and if they can not well afford it, just keep their pay going all the same." While I am about so as to see most of my hands every hour or two, I can so direct them that their work is done properly. If I am absent, a good deal will necessarily be done in a wasteful or unprofitable way. This is true of any man who neglects his help, or who does not provide competent overseers. The friends here at home are exceedingly ready and willing

to do as I wish; but the trouble is, when I am absent they do not *know* my wishes, and can not well know all the plans I have in mind. Therefore, in order to go away I must make up my mind to accept, as a matter of course, more or less unprofitable work, and perhaps also have more or less useless labor performed. As a rule, I think every man's first duty is to look after his own affairs. Why, even the Bible enjoins that. In Proverbs we read, "Seest thou a man diligent in business? he shall stand before kings, he shall not stand before mean men."

Three or four days before the time appointed, I began to pray very earnestly on the subject, asking God to tell me where duty lay; and I remember telling my wife that I felt sure my prayers would be answered—that is, it would be impressed on my mind whether I ought to go. For several days it seemed as if no light were to be given in regard to the matter. I could not see that the Holy Spirit dictated or impressed my mind either way. If it would not sound irreverent, I could have told the honest truth by saying to my wife, "So far God has said nothing to me about it." I should not like to use such an expression, however, for fear that many of my good friends would think me cranky. In fact, I should fear that I would be a little troubled about any of my friends if *they* should reply in just that sort of language. During the very wet fall that we have had, my wife and children have often asked me anxiously what the barometer said about the weather. A great many times I have replied evasively, or said nothing. But they often say, "Why don't you tell exactly what the barometer does say?" I reply, "For the simple truth that it does not say *anything at all*. It neither goes up nor down, and I suppose we must conclude that the weather is to remain—at least for the present—just about as it is now." They have all learned to have *faith* in the barometer, for a great many times I have said to them, positively and decidedly, "The sun is surely coming out; and from the manner in which the mercury rises, and the rapidity with which it goes up, you will certainly see clear sky before noon, and I shall be much disappointed if we do not see it come out in a couple of hours." When I have time to keep my eye on the barometer, so as to watch it and give it a thump every hour or two, it is very rare I make a mistake. Now, friends, you have a good illustration right before you. Can we depend on the promptings of the Holy Spirit in the same way, or in a like way that we depend on the movements of the column of mercury? I think we can, and it gives me pleasure to say this. I have been thinking over it for several days, whether it were right and proper for me to tell you this, and to state it just as I have said it above; and I rejoice to feel, right now while I am talking, that the Holy Spirit says in my heart, "My child, you are safe and right in saying just what you have said. It pleases me to have you exhort your readers to *have faith* in just this way." Shortly before it became time to make preparations for my absence, I began to feel very plainly that God called upon me to go. The Holy Spirit seemed to direct that I should make arrangements according to the best of my human wisdom for work while I was absent, and then to drop care and anxiety, and leave home with an untroubled spirit, asking constantly for direction as to what I was to do. We have an illustration in the book of Acts. You will remember that Cornelius was sent to Joppa, to find Peter, who lodged with a tanner by the side of the sea. This man was to tell Cornelius what he ought to do. I have often thought of this passage. Does the Holy Spirit ever send us on like errands? I believe it does. Now,

please do not imagine, dear friends, that I had any idea in mind that there was any special great thing for me to do away off in Keokuk, Iowa. I only felt that it was God's wish that I should be present with the rest of the brethren, and do what I could to help matters along, and possibly to do something in a quiet and natural way for Christ Jesus.

No doubt this prompting of the Holy Spirit came through natural events and human agencies a good deal. Three different friends wrote they were looking forward with great pleasure to the time when they would shake hands with their old friend A. I. Root at the coming convention. Then when I thought of being absent, something seemed to tell me that I was doing wrong, and it began to lie as a heavy weight on my conscience; and when I considered the matter of changing my plans, and of going after all, peace and happiness began to come into my heart. For quite a time after leaving home I did not feel any enjoyment at all; but I decided that I would do my duty as well as I knew how, whether I enjoyed it or not. And I think, dear friends, this is one of the very best ways to secure the peace of God. Make up your mind that inclination must give way to duty, peace or no peace, and God will send the reward in his own time.

One of the first disappointments was to find that, when we arrived at Elyria, the Lake Shore train was two hours late. We did not know whether Dr. Mason expected to attend or not; but I invested 25 cents in a telegram. This telegram had the effect of waking him up, and of bringing him to the depot, even after he, like myself, had decided not to go. When we were within perhaps a hundred miles of Keokuk, a stranger sat down near us who eyed me very intently for some time. I finally asked him if he was not one of the bee-keeping friends on the way to the convention. He replied that he was, and added, "Are you not A. I. Root?"

I nodded assent. Then he said, "My name is Draper."

"A. N. Draper, of Upper Alton, Ill.?" said I, interrogatively.

He nodded, and we were old friends at once. Friend D. used to write for the *American Bee Journal*, before GLEANINGS had an existence. He had followed me, even to covering my beehives with stable manure, as I did years ago; and then he afterward put his bees in a cold-frame, as a good many others did in those old times. He risked all he had in the venture, then gave up bee-keeping in disgust, as he lost all. But, like a good many others, he came back again to it. Pretty soon another friend who lives on the banks of the Illinois River, Mr. J. M. Hambach, of Spring, Ill., came in. This latter friend had secured about 10,000 lbs. of Spanish-needle honey, gathered from the lowlands along the river. In his market, the honey from Spanish needle is now selling more readily, and is giving better satisfaction, than even white clover. It is of a beautiful amber color, and I think it is often sold as goldenrod honey.

The convention was one of the best I ever attended. The attendance was not only large, but our Western friends came and handed in their dollars in order that they might become members, more generally, I think, than in any other convention I ever attended. Perhaps I might mention right here, that one of the troubles in our conventions is in this very line. A good many attend every session, take great interest in the proceedings, and sometimes take part, to a considerable extent, in the debates; yet when the call is made for the necessary funds to keep up the necessary expenses, in many localities there has been a considerable

hanging back. Dr. Miller, Dr. Mason, Prof. Cook, and others, have urged so hard that every one should hand in a dollar that sometimes we have almost had hard feelings in regard to the matter. If we move our national convention all over the United States, or, at least, over a great portion of it, as we have been doing, it happens, as a matter of course, that a great part of the members (and oftentimes the presiding officers) are made up of people who never attended before, and perhaps who may never attend again. This seems a little unfortunate; and yet if all parts of the United States are equally represented, it must be so to a greater or lesser extent. During this last session, arrangements were made whereby we might have a certain number, at least, who would be members year after year, whether they could be in attendance or not. This is secured by making anybody a life-member on the payment of \$10.00. If I am correct, the editor of the *American Bee Journal* was the first one to pay \$10.00 and become a life-member. Ernest and I have also agreed to become life-members, and I said at the convention that I thought the United States should furnish at least 25 who would pay a like sum, and hereafter be members for life. Now, then, who is there among our readers who is ready to stand by us for the purpose of making a permanent institution of the North American Bee-keepers' Society, as it is to be styled, in order that it may stand on a permanent basis, and not be left to be blown about by the wind, and dry up and die like autumn leaves? It is proposed to have it incorporated according to the laws of the United States, and it seems to me this would be a very sensible and wise proceeding. Further particulars in regard to the matter will be found in the *American Bee Journal*, as also a full report of the proceedings of the convention, which we do not give here, as we do not wish to have our pages contain something that most of our readers will see in the *American Bee Journal*.

I hope I may digress enough right here to urge every reader of GLEANINGS to subscribe for the *American Bee Journal* at once, if he does not now take it. Its editor has perhaps done more to keep up our conventions, report their proceedings, and labor for the general interest of the bee-keepers of America than any other one among us. The field occupied is so different from the one covered by GLEANINGS that you will not find much repetition if you take the two.

Now for the promise in our text. I soon began to realize why it was that God wanted me to go to Keokuk. A good many of the friends who were there had taken GLEANINGS almost since the time it was printed by windmill power. They knew me better than they knew their next-door neighbors, many of them, and they wanted to see me and shake hands. Perhaps some who have followed me all these years came more to see me than for almost any thing else. Please remember that I do not say this boastfully, but to show you that I should have been sadly out of place, and lacking in friendly, brotherly spirit, if I had allowed any thing to keep me away from such a gathering. I did not realize it fully until I came to read my paper. As it is hard for me to speak to a large roomful, I told them, before I commenced, that I should consider it a great favor if they would come up and occupy the front seats, so that we might have it more like a family gathering. Our good friend Mrs. Harrison started the movement by picking up her chair, and bringing it quite close up to the speaker, when there was a general move to following her example.

During the reading of my paper (see Our Homes, last issue), when I came to speak of

God's gifts to bee-keepers I digressed from my reading long enough to mention the Spanish-needle honey I had been told of (samples were on the table at my side) on the banks of the Illinois River, and suggested that God's gifts were many times lying near our own doors, unknown and unappreciated. A lady in the audience suggested there were untold acres of the same plant lying along the *Mississippi* River also. Somebody who lived further down stream gave us another corroboration of the statement, and pretty soon so many facts came in to support the spirit of my paper—have faith in God—that the president tried to call them to order. They had got to going, however; and in their eagerness to supply your humble servant with the facts he wanted, they forgot president, essay, and every thing else. Finally the president good-naturedly called a halt. Said he, in substance, "Why, who ever heard of such a thing as interrupting an essay to give your separate experiences? Let Bro. Root finish his paper, and then we shall be glad to have you discuss the matter to your hearers' content."

Some of them looked somewhat astonished, and perhaps a little put out, because they could not tell their story right then and there. But instead of feeling annoyed myself, it gave me a new thrill of joy to see how anxious these friends were to furnish me any information I called for in any particular line of our work. It touched me, too, to see how soon they felt acquainted with me, and treated me as if I were *really* "one of the family."

Later on, when they came to discuss important matters, I was surprised and astonished to see how eager and full of enthusiasm these Western friends were to understand more of the different questions that puzzle us in bee-keeping. As an illustration: The president asked for a show of hands in regard to the matter of using foundation—how many used it in full sheets? how many used only starters? how many practiced Hutchinson's plan of using only starters for hiving new swarms? how many used foundation in section boxes? Our good president, R. L. Taylor, seemed to have a happy faculty of bringing out all these points, and in getting every one in the room to have something to say in the matter, and at the same time not have valuable time wasted.

Some facts in regard to the value of sugar compared with honey for winter stores interested me greatly. President Taylor himself gave us the following most important item. Quite a number of colonies were fed on stores of sugar syrup, and an equal quantity were provided with stores of honey. The colonies were weighed, both in the spring and fall; and those having honey consumed nearly if not quite *twice* as many pounds of feed. I have been for years past fully satisfied that stores of sugar syrup are more wholesome, and a more concentrated food than any honey; but I was not prepared to find so great a difference. A great amount of questioning and experiences were given in this line, and the whole evidence seemed to be almost invariably in favor of sugar. A convention is the only possible place in which such a matter can be thoroughly discussed, and important facts like this settled. Bee-journals are good, and have their office, but we must have conventions also. I felt ashamed of myself for having ever entertained the thought that I might be excusable in staying away. At one of our temperance meetings some years ago, a reformed man told a little story of his soldier life. He said a young boy, who had enlisted contrary to the best judgment of his friends and relatives, once told his comrades that he was afraid he might show the "white feather"

in a coming conflict. Said he, "Boys, if you see any indications in me of any thing of the sort, I just want you to take me by the collar and straighten me up, and hold me to my post." Our reformed friend remarked that he wished the Christian temperance people to take hold of him in the same way, if he got back; and my feeling during that whole convention is just expressed in the above. If I should again show any such foolish, short-sighted disposition to shirk and stay at home, I hope some of my good friends will take me by the collar, and straighten me up, reminding me of this passage in this present paper.

I think I never saw more facts of importance brought out in so short a time. The bright and expectant faces, the brief, simple testimonies, and the general feeling of brotherly love, and desire to help each other, were really wonderful. Before I knew it I was enjoying myself most intensely. Those thrills of joy that I have told you about, began to come into my heart, wave after wave. There were not very many present who had read the bee-journals, and experimented with bees, as long as I have. Perhaps *none* had read so much voluminous correspondence, and this enabled me to furnish important connecting links here and there. There was so much interest manifested that the president found it hard work to get them to adjourn at dinner time. After the adjournment, of course a great many gathered around the Roots, both old and young. Ernest's visit through York State had made him acquainted, not only with the York State people, but with friends away out west as well. A good many were inviting me to go home with them, or to look at something. But a white-haired German friend, Weyend by name, in a sort of comic way captured and ensnared your old friend completely, by a few brief sentences. His invitation was worded something as follows:

"Mr. Root goes with me. I can show him artesian wells, where the water comes out so as to make a little lake."

He had been reading GLEANINGS, and he knew well where I was deeply interested, and was ready to take advantage of it. He continued:

"Yes, there are beautiful fish in the ponds around the wells, and I will show you where the water goes down the bluff and carries a water-motor that runs a dynamo."

When he spoke these words he looked at Ernest in a comic sort of way, as much as to say, "You see I am going to have Ernest, too;" and in a little time a party was organized to go and see these wonders in the suburbs of Keokuk. If you look now at the words in the latter part of our text, you will see there a promise—"and show thee great and mighty things which thou knowest not." I wish I could give you a picture of our good friend Weyend. May be we will some time; but for the present we must content ourselves with a pen-picture. He is an excellent type of a good-natured, jovial, enthusiastic son of the "fatherland." His quaint, peculiar ways, win friends at once, and a sort of dry native wit soon sets his companions into fits of laughter that are almost uncontrollable. For instance:

"Why, Mr. W., you are taking us on top of a great hill. Surely the artesian wells are not up here, are they? What should put it into the head of any man to think of drilling a well on top of this great bluff?"

These wells belong to a wealthy starch-manufacturer, Mr. J. C. Hubinger. Friend W. explained:

"Why, Mr. Hubinger he has got lots of money, and he wanted a well right up there, and when he wants any thing he wants it *bad*!"

"No doubt he wanted it bad; but what assurance had he that he would find water to come even to the top of the ground, on such a great bluff as this—more than 100 feet above the waters of the Mississippi River?"

"Why, Mr. Hubinger he *got* to have it; and when he *got* to have a thing it *must* come, so he kept on drilling."

We soon came to one of the wells. There were three in all, and each one of them was sending out its treasures of water into beautifully paved and cemented reservoirs at our feet. One of the wells was in process of drilling; and as I approached the driller I asked, "How much water comes out of the top of this well in a minute?"

"About 900 gallons."

"How far down are you?"

"About 1820 feet."

I felt anxious to see what sort of rock came up, so I asked, "How often do you use the sand-pump?" thinking we might wait and see the operation, and see what would come out. To my surprise, however, he replied, "Why, we don't sand-pump at all. The stream of water which you see washes out all the sand and pounded rock; so all we have to do is to keep right on drilling until the drill is pulled up to sharpen it."

Now, friends, here is something intensely interesting. These vast streams of water that come out with such force as to go to the top of this bluff come constantly from fissures in the rock they are drilling, and these fissures are so frequent that all debris is washed out. We descended a bank, so steep that it made Dr. Miller puff and blow, and found, many feet below, almost on a level with the river, a *hundred-horse-power* turbine water-wheel. Another new water-motor was being put in place to give additional power. These water-motors carried the latest improved dynamos, and great wires ran up to the city to furnish electric lights. The artesian wells spout forth their treasures through the day-time, which is stored up in those large reservoirs, or miniature lakes, they might be called. When it gets dusk, the great valves are opened, and the turbines with their immense power propel the dynamos that send the stream of electricity up through the town.* Is it not wonderful? and does it not verify the promise of our text?

The next day we visited the Dadants, and saw their factory for the production of the beautiful foundation that rivals any thing else made in the world, and I had another treat. The Dadants have perhaps the finest factory for foundation in the world. Their output during 1890 was something like 85,000 lbs., while our own was only about 30,000 lbs.

"But why in the world, friends, do you not use steam power when you are doing so large a business?"

Our good friend C. P. replied:

"Mr. Root, there is just one thing that makes us hold on. A company is already organized, with a capital of two millions of dollars, to take the Mississippi River at the rapids you observed, and make it turn water-motors that shall move dynamos to send electricity all over the surrounding country, to furnish power wherever it is needed; and we would rather have a big wire, and have the power, rather

than to have a steam-engine and be obliged to haul coal away out here."

So you see, dear friends, what there is before us in the future.

You may perhaps know that a company has been incorporated under the laws of New York, and they have already begun the work of digging a very deep canal parallel with the rapids of the Niagara River, for the purpose of taking advantage of the great descent of the river here for about half a mile above the falls, and ending near the base of the cataract. When the full capacity of the fall is employed it is believed that it will be equivalent to 700,000 horsepower, and this at no expense save for repairs, as the supply is perfectly uniform the year round. To do these great things, however, we must work together. No man can accomplish any thing by being a Robinson Crusoe. All these great projects and movements are the result of the combined efforts of great numbers of earnest thinkers and workers. Friend Weyend gave us a bright illustration of his friend Hubinger, the starch-man. I do not know whether he is a Christian or not; but he shows an element of Christianity, in one sense at least. He goes down into those steep bluffs a quarter of a mile or more in pursuit of Nature's pent-up waters. They have utilized them by the most efficient water-motors known, and finally they set the water-motors to driving these wonderful dynamos, a project which is a result of the thinking and stirring brains of the present decade. Friend Weyend's comical "got to have it" expresses the energy and determination of the man. And is not the thought on a line with the Bible promise, "Seek, and ye shall find; knock, and it shall be opened unto you"? But to do this we must be in intimate partnership with our fellow-men. Conventions made up of people interested in special pursuits are on the highway to these attainments, especially where these conventions are opened with prayer, and interspersed with songs and hymns, as was every session of the convention at Keokuk.

Call unto me, and I will answer thee, and show thee great and mighty things which thou knowest not.

SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LOVE TO RAISE CROPS.

That art on which a thousand millions of men are dependent for their sustenance, and two hundred millions of men expend their daily toil, must be the most important of all—the parent and precursor of all other arts. In every country, then, and at every period, the investigation of the principles on which the rational practice of this art is founded ought to have commanded the principal attention of the greatest minds.

JAMES F. W. JOHNSTON.

THE OHIO EXPERIMENT-STATION REPORT ON STRAWBERRIES.

This is sent free to every resident of the State of Ohio on application. Address Experiment Station, Columbus, O. We presume it will be sent to others for a couple of stamps, although we do not know. If any of you wish a report by disinterested parties in regard to all new strawberry-berries offered during the past year or two, you want this report. Not only does it chronicle the tests on the Experiment Grounds at Columbus, but Prof. Green visited many of the leading strawberry-growers of the State, while the berries were fruiting. You will remember that he had just left Matthew Crawford's at the time I came on the grounds. It almost makes one smile to see how nearly their decision agrees with mine. For instance, in their Summary No. 2, we read:

The following varieties have been thoroughly tested, and are suited to the wants of those who

* Out on the hill before me, our big windmill is standing idle. It has filled its tank, and has been days and weeks waiting for a job. Well, all that is needed to let this windmill use its surplus power for lighting our house is a little water-motor and a dynamo to match. It will easily pump water enough during the day to run dynamos enough to light all the private dwellings in "Rootville."

grow berries for market: Bubach, Eureka, Haverland, Crescent, Warfield.

They have singled out five berries, for market. Two of these—Bubach and Haverland—are the two I have selected. My Warfields were washed out by the high water, or I should perhaps have included that also. Their Summary No. 3 is as follows:

Where large berries are desired, rather than quantity, the following can be recommended for home use or for market: Cumberland, Crawford, Gandy, Louise, Lida, Miami, Pearl.

You will notice this includes the Gandy, which I have selected as the finest-looking berry. All the others are also growing on our own grounds. Summary No. 4 includes the new varieties that are most promising. They are, the Enhance, Farnsworth, Ivanhoe, Middlefield, Muskingum, Michel's Early, Parker Earle, Shuster's Gem, Waldron. Somewhat to my surprise, they predict that the Jessie, among others, will soon be dropped. The objection they make to the Jessie is, that it is, to use their own language, "Now considered about as unreliable as the Sharpless." Perhaps the principal reason is, that the blossoms are so easily injured by frost.

SUGGESTIONS FROM OUR OHIO EXPERIMENT STATION, IN REGARD TO THE CONDENSED SEED CATALOGUE.

Friend Root:—Since you have so kindly asked me to go through the list of vegetables, and give what I think best, I will do so. I do not feel as if my opinion were worth a great deal; but it may lead to a discussion of the subject, which I know will do good. I like your list given Oct. 15, and, in many cases, I do not see where a change can be made for the better; but where I think it can, I will give it, and mention only those I want changed.

In but few cases I do not see where there is need for more than one kind, except where the earliness, lateness, form, use, or color, gives the vegetable another quality than another of the same sort. Therefore I do not think you will find your list enlarged a great deal.

Bush Beans—I hardly see how we can get along without the Golden Wax.

Pole Bean—It seems as if a kind that is easier to raise than the lima would be necessary, such as the Dutch Case-Knife.

Beets—For very early, Crosby's Egyptian seems to lead. The Eclipse would do better for one later on. I asked Mr. Hickman, the Agriculturist of the station, who has had a large experience, what beets he would recommend for cattle, and he said Lane's Imperial sugar beet, and Long Red mangel, so I do not think there is much question about this.

Cabbage—For an early cabbage there is nothing that is better than Jersey Wakefield; after that is gone, the Early Summer follows up nicely; but for late it is difficult to say what is best. A good strain of Flat Dutch is perhaps the best, but I think that, as a rule, consumers would prefer a smaller and more compact head; but in looking over our forty kinds I have failed to find what I want.

Cauliflower—If there is any thing better than the Snowball, I have never seen it.

Celery—If by the Golden Dwarf you mean the Golden Self-blanching, I can not recommend it, especially when the White Plume contains all of its good points and many more. For a late variety the Golden Heart is good. The red varieties should be better known than they are, for the quality is the best of any celery. The New Rose is one of the best. The Giant Pascal, introduced last year, is worthy of a trial.

Sweet Corn—For late I like Stowell's Evergreen.

Lettuce—We have never had a test here, where the Grand Rapids has done better than the Black-seeded Simpson. The Deacon has done as well for us as any head lettuce. I do not see what place there is for Henderson's New York lettuce. The Boston Curled seems to have a place for table decoration in winter, for it sells from our wagon quicker than almost any other kind during this season of the year. It is a slow grower, but it lasts well after coming to maturity.

Muskmelons—The Early Hackensack seems to be a favorite with growers.

Watermelons—I do not know enough about watermelons to recommend one.

Onions—The Michigan Yellow Globe seems to be a little better than the Danvers. For a large foreign onion to start in the greenhouse, I should much prefer the Spanish King, or, what is the same, Maule's Prize-taker. We raised some this year that are just as nice as the onions that are shipped in in the peculiar-shaped crates, and sold by the pound. They are a decidedly better keeper than the White Victoria.

Parsnip—In our trial last year we decided that the Long Smooth was as good as any.

Peas—We have tried to find a difference in the peas sold by seedsmen under the names of First and Best, Best of All, etc., and find that they are all very good, but none best. The Alaska is one of this sort. The American Wonder is the best of dwarfs, and Stratagem is fine for late.

Potatoes—It is hard to tell just what potatoes to recommend; but I will give what I would raise if I were growing potatoes, unless I changed my mind. For early, Early Ohio; for early white, Early Puritan; for medium, Summit; for late, White Elephant.

Radishes—Your selection is what I would give, almost exactly.

Squashes—We have been raising the Essex Hybrid here; but while it is earlier, and yields better, and is of as good a quality as the Hubbard, the trouble of making people think so offsets its good qualities; so I would recommend the Hubbard.

Tomatoes—The Ignotum is a fine tomato; and, for a red one, I know of nothing better. Where the market calls for a purple tomato, I would say the Acme or Beauty. As an addition to your list of tomatoes to be raised "just for the fun of it," I would suggest the White Apple, for it is certainly of the finest quality.

Turnips—The Purple-top Strap Leaf has always done the best here. I wish I knew a French or Swede turnip that would fill the bill. I think it must be the climate or soil that prevents them being raised as they used to be.

I have now gone through the list, and made what changes I thought best; but in no case am I positive that a change can not be made for the better. What vegetables I have not mentioned means that I do not know any thing about them; or your selection is what I would make. In all cases I have given my own opinion rather than any thing gleaned from catalogues and books.

E. C. GREEN.

Columbus, O., Oct. 27.

It begins to be apparent, good friends, that we shall have to do something like this: Make our brief selection, and indicate it by heavy black type; then have some additional varieties, that we can not very well drop, in smaller type. Peter Henderson and others have already done this. It gives me great encouragement to find that friend Green, the lady who has written, and others, come so near approving of the de-

cision I have already made. Here is something from

ONE OF OUR LADY READERS WHO LOVES
TO SEE THINGS GROW.

I am very much interested in seeds and gardening; and when taking up a catalogue I have often wished there were not so many varieties to select from. I would second your effort to cut down the list, and would like to review your list somewhat, and give some of my experience with varieties.

I tried the Eclipse and Lentz beets this year. They were both excellent. Lentz is a trifle ahead, I thought. The Basanno has been our standby in the past, and I believe it is a good beet.

I am all at sea on cabbage. I have eaten Fottler's that were so good I didn't see how they could be surpassed.

We tried Corey's sweet corn last year. It was so poor in quality we could not eat it at all. This year I planted five kinds in one day, all in one straight row; viz., Potter's Superb, of Mills; Gold Coin, and Honey, C. Weckesser; Ford's Early, A. I. Root; Shoe-peg, Storrs, Harrison & Co. We also had Evergreen. Potter's Superb was tasteless; none of the family would eat it. Ford's was sweet and good, and yielded very well. The Honey was also good; Gold Coin, late, large, and sweet, but some thought it a little rank-flavored; but of all the six kinds, none gave us the satisfaction that the Shoe-peg did. It was so sweet and delicate-flavored that some of the household would touch no other, not even the Evergreen, while it was to be had—not that others were not good, but it was so superior. It followed close on the Ford's, and continued a long time, as the ears, though small, were so numerous. We shall probably plant Ford's and Shoe-peg next year.

Cucumber.—For slicing, I don't know which is best; but for pickles, I like Early Russian.

Lettuce.—Henderson's New York.

Muskmelons.—Emerald Gem, New Princess, and Countess, were all good with us this year.

Watermelon.—We grew only Hungarian Honey, and it was very good.

Peas.—I have discarded the American Wonder. It does not amount to anything with me. Several of my neighbors say the same of it. McLean's Little Gem and Champion of England are my favorites.

Radishes.—I planted Rosy Gem, New Surprise, and Shepherd. Rosy Gem was by far the best.

Squashes.—Hubbard, the best we have ever grown.

Tomatoes.—We grew Ignotum, Mikado, New Peach, and Trophy; picked a ripe tomato from each of the first mentioned, all on the same day. The Mikado and Peach continued to ripen up quickly. Ignotum and Trophy were slow to ripen, especially the Ignotum; but when it did ripen it was a general favorite. All rotted badly, the Peach the least of any, though on the whole it was rather disappointing. We shall probably plant Ignotum and Mikado next year. I think soil and location have much to do with different reports of results with the same variety of seed, and for that reason a larger number of varieties may have to be retained.

Macedon, N. Y.

A. JENNIE WILSON.

RAPE AS A HONEY-PLANT.

Mr. Root.—You wished to know about the rape-plant and its honey-qualities. I have raised two crops this year. It is far ahead of Japanese buckwheat. I had 40 acres of wheat, and about 8 or 10 acres of rape, and 52 swarms of bees at work on it, and three-fourths of my honey is from rape. It is as white as clover

honey (that from rape, I mean). We shall put in 20 or 30 acres of rape, and 75 to 100 of Japanese buckwheat next year. I will have 100 swarms at work on it. We are great hands to raise buckwheat. The rape does well here in Kansas. The frost does not kill it nor hurt it a bit. The fleas do not know we raise it in Kansas yet. I hope they will not. We had a patch this fall that could be seen 10 miles. The people think it is mustard. One old man said that, if we would grind it and put it on meat, we could not tell the difference. I told him we would give him some if he liked it, but he gave in when he tasted of the seed.

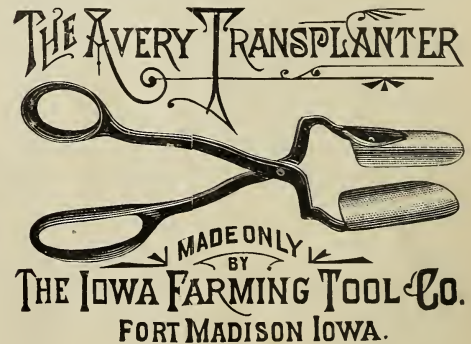
BURTON B. CRANE.

Dover, Kansas, Nov. 6, 1890.

Well, I declare, friend C., that sounds like business. There is one thing you do not tell us. During what months of the year do you sow rape? My impression is, that it is nearly as hardy as the seven-top turnip. If such were the case, we could sow it in the fall, and thus entirely obviate the trouble with the black flea. A certain variety called winter rape, I know, will winter over in our locality; but whether the common will or not, I do not know. I am glad you gave us the old man's experience, for quite a few insist that rape and mustard are the same thing. It can often be put in as a chance crop, for I have seen blossoms on it within 30 days after it was sown. We have just obtained a nice lot of fresh new seed, which we can furnish in 10-lb. lots for 7½ cents per lb.; 100 lbs., \$6.00. For a single pound the price will be 10 cents, or 20 cents by mail.

A RIVAL TO OUR TRANSPLANTING-TUBES.

We have just got hold of the little tool pictured below, that seems to bid fair to be a very valuable implement for florists, market-gardeners, and others.



To use it we take the same trays we used for transplanting-tubes; and when the ground is a little damp (as it is all the while in Medina this fall) we can pick up plants with a little ball of earth around them, so as to make it look almost exactly like the potted strawberry-plants; and these can be laid in the trays, and wheeled to where you want them, and then be set out. It dispenses with the machinery of the transplanting-tubes, and is therefore really a more rapid method of working. While I write, our boys are using it to move spinach into cold-frames, and it seems to answer the purpose perfectly. The price is 50 cts. each. If wanted by mail, add 10 cts. for postage and packing. The

blade is made of steel, and the handle is malleable, painted a bright red, so that, if you lose it in the grass or among the plants, your eye catches on to it very readily. By the way, this matter of painting the handles of your tools a very bright red is a very "bright" idea. When you have a rainy day, get a pot of bright-red paint; dip the handles of your trowels, weeders, etc., into it, and let them dry. Then paint all your hoes, spades, forks, shovels, and every thing else in the same way. If a neighbor borrows your tools, you can tell whether he has got your shovel or his own, across an acre lot.

The Iowa Farming-Tool Co. make a larger tool for \$2.00, which is also about as handy as any thing you can get for digging post-holes. The little tool we illustrate would no doubt be a wonderfully fine thing for strawberry-growers. We can furnish either at prices mentioned.

EDITORIAL.

For we are saved by hope; but hope that is seen is not hope; for what a man seeth, why doth he yet hope for?—ROM. 8: 24. ☐

L. L. LANGSTROTH IMPROVING.

OUR old friend is improving, as you will see by a short note elsewhere. We trust we shall be able to hear from him from time to time as his health permits.

COMMON SALT AS A REMEDY FOR FOUL BROOD.

IN another column our good friend Cogshall says salt water is certainly a remedy, etc. I fear friend C. forgets that this matter has been thoroughly discussed at conventions, and has been carefully tested by scientific men until it is pretty certain that common salt or salt water has no effect whatever on foul brood.

THE SUFFERERS IN IRELAND—NO RELIEF NEEDED AT PRESENT.

THE American committee for the relief of the famine in Ireland have just issued a statement, to the effect that England has taken effective measures to relieve her suffering at once. Our British brothers were no doubt spurred to activity by the efforts our American people had commenced to make. We are glad to know that the suffering has been so promptly cared for, and we hope no unpleasant feelings may arise between us and our friends over the water. Inasmuch as we meant well, they will surely forgive us for any hastiness on our part in starting measures to relieve the suffering.

CHAFF HIVES WITHOUT THE CHAFF.

THE remarks on this subject, in various places in this present number, prompt me to remind the boys that this matter has been discussed, pro and con, for all of 25 years. It has also been tested most thoroughly. Briefly: Protecting a bee-hive by means of a box, barrel, or hogshhead, or any equivalent, doubtless keeps off some frost, but it also keeps off the sun: and most of us have tried setting hives on the north side of a barn, where they get all of the north wind and none of the sun's rays. I

have had hives in such situations in the spring, that were dwindling badly. When I moved them into the full blaze of the sun, improvement was seen immediately. Now, the same objection applies, to some extent, to the chaff hive; but the chaff packing hinders a free circulation of the air, and partakes somewhat of the nature of fur, or woolen clothing, especially if the shell that holds the chaff has openings to permit it to keep dry. If you can so manage as to have a dead-air space with the air perfectly confined, so that cold breezes are not circulating, it does better. But a chaff hive with the chaff packing left out is too much like putting bed-clothes on the top of the house, instead of close to our body, as I have explained in the A B C book. In all our experiments we should remember that a strong colony of bees in perfect health will ordinarily pass the winter almost anywhere; and they have done it a good many times without any hive about them *at all*, even in tolerably cold climates. Double hives, with an air-space between them, were tested largely, before the use of chaff at all.

AN ANTI-LOTTERY LAW.

WE are pleased to notice that the Congress of the United States has recently passed a law making it a penalty of not less than \$50.00 nor more than \$500, and imprisonment not less than 10 nor more than 90 days, for engaging in or abetting the matter of offering money, watches, candy, or other articles of merchandise, to help the sale of tobacco, baking-powder, periodicals, or any thing of that sort. Any scheme for distributing prizes by chance, or drawing tickets, comes under this head. May the Lord be praised for the new law! and may our people be moved to insist on a prompt enforcement of it to the very letter. I have seen a notice, in some of the papers, that the managers of a church fair have already been arrested and fined for a violation of the above law; and I, for one, am very glad that they have commenced the work by straightening up the Christian people. Below is a copy of the law:

SECTION 6929.—Whoever writes, prints, or publishes in any way, an account of any lottery or scheme of chance, of any kind or description, by whatsoever name, style, or title the same may be denominated, or known, stating when or where the same is to be or has been drawn, or the prizes therein, or any of them, or the price of a ticket, or showing therein where any ticket may be or has been obtained, or in any way giving publicity to such lottery or scheme of chance, shall be fined not more than five hundred dollars, or imprisoned in the county jail not more than six months, or both; and such person shall be liable to prosecution in each and every county where such publication shall be by such person circulated.

SEC. 6930.—Whoever vends, sells, barters, or in any way disposes of any ticket, order, or device of any kind, for or representing any number of shares, or any interest, in any lottery, "policy," or scheme of chance of any kind or description, by whatever name, style, or title the same may be denominated, or known, whether located, or to be drawn, paid, or carried on, within or without this State, shall be fined not more than five hundred dollars, or imprisoned not more than six months, or both.

SEC. 6931.—Whoever, publicly or privately, as owner or agent, establishes, opens, sets on foot, carries on, promotes, makes, draws, or acts as "backer" or "vender," for or on account of, or is in any way concerned in, any lottery, "policy," or scheme of chance, of any kind or description, by whatever name, style, or title the same may be denominated, or known, whether located, or to be drawn, paid, or carried on within or without this State, or by any of the means aforesaid exposes or sets to sale any thing of value, shall be fined not more than five hundred nor less than fifty dollars, and imprisoned not more than ninety nor less than ten days.

A NEW BEE-BOOK.

"THE SPANISH BEE-KEEPERS' GUIDE" is the title of a new book on apiculture, written by our go-ahead friend Francisco F. Andreu, of Mahon, island of Minorca, Spain. Friend A. has fully caught the spirit of the times, and in this little work of his he has given to his countrymen enough information to revolutionize bee-keeping in his nation. It contains 132 pages, fully illustrated.

"HOW I PRODUCE COMB HONEY"

is the title of a new edition of that little work by George E. Hilton, Fremont, Mich. We notice he has introduced keying-up in T supers. A good idea, friend H. The time is fast approaching when all bee-keepers will demand that their sections be wedged up tight, to prevent propolis from being deposited so freely. The price of the book is 5 cents. Send to the author, as above.

THE REPORT OF THE INTERNATIONAL CONVENTION.

We have given only a brief report of the proceedings of the association at Keokuk. The very efficient secretary, Mr. C. P. Dadant, has made a most complete report—perhaps the fullest and best—of any that has ever been given in the history of the association, and the same will be published in the *American Bee Journal*. Bro. Newman very generously offers to furnish copies free to those who are not subscribers to his journal.

THE RIGHT KIND OF BACKING UP.

SOMEBODY intimated that friend Hutchinson either had a "barrel of money," or else somebody to back him up in his *Review*. After stating the facts, that he started without capital, he says:

If I have had any "backing up" it is only such as comes from the nimble fingers, wise counsels, and economical ways of a loving wife, and it is all the "backing up" we ask for.

Right, friend H. How many a man owes his success and attainments to the wise counsels and economical ways of a loving wife! No wonder the *Review* has attained its present success.

WHERE THE NEXT MEETING OF THE INTERNATIONAL BEE-ASSOCIATION IS TO BE HELD.

SOME of us hoped that the International Bee-Association would hold its next meeting at Assembly Point, on Lake George; but when the matter came up properly before the convention, a good many, while they admitted we *must* hold it at some point in the East, urged that Lake George was too much of a pleasure-resort, and that we could not very well combine business and pleasure; furthermore, the lake is not as accessible by railroads, as, for instance, Albany. The latter, being a prominent railroad center, the capital of the State, and midway between the New England and New York and Pennsylvania bee-keepers, on motion was settled upon as the next place of meeting, and

I believe the decision, all in all, was wise. I wish to suggest right here, that, after holding the convention, those of us who feel so inclined can go up to Lake George, and have our bee-keepers' camp. Thus the rule, "business before pleasure," will be carried out, and the wishes of the New England and New York bee-keepers satisfied.

THE "GOOD" CANDY FOR QUEEN-CAGES.

THE *Apiculturist* for November suggests that, while we are giving friend Benton \$50.00 for his queen-cage for long distances, we should remember I. R. Good, who gave us the idea of pulverized sugar and honey for the "Good candy" for said cages, and that even the Benton cage would be worthless without this method of provisioning it. All right. We do not know of anybody, to reward whom it would give us more pleasure for his work than our good friend I. R. Good. We place to his credit \$25.00 for what he has done in helping us to mail queens safely.

AN OUT-APIARY HIVE.

W. Z. HUTCHINSON, in the *Review*, says we can not very well afford to have a hive for out-apiaries, that can not be hauled. He thinks we should bring bees all home, *a la* Elwood and Hetherington; winter them in a large cellar, and move them out in the spring. And he closes by saying, "There must be no opening of hives to fasten frames, and there must be some simple method of fastening on bottom-board and cover, and giving ventilation when needed, that can be arranged in just about—well, not more than two minutes." That is just it. Almost all bee-keepers that the writer visited, having out-apiaries, demand and use something as above outlined. Migratory bee-keeping requires that hives be readily movable. While on the cars, talking with a bee-keeper (Mr. A. N. Draper I think it was) on our way to the National Association at Keokuk, I learned that he had been enabled to secure crops of honey by moving a yard, that he would not have obtained if he had left the bees where they were. Yes, sir. The hives must be readily movable: if not, the out-apiary bee-keeper will not have them. But, hold! A. E. Manum, of Bristol, Vt., has large chaff hives, and he carries on a system of six or seven out-apiaries. But then, the hive proper inside of his chaff hive is small, and can be lifted out of said hive and put on a wagon, and moved about. On the whole, I do not believe his plan is as convenient as a single-walled hive that can be moved to the home location for wintering, away from thieves, and under personal supervision.

E. R.

I would suggest that our good friend France has about as many out-apiaries as anybody, but he never moves them at all. His chaff-packed tenement hives stand where they are first planted, both winter and summer.

A. I. R.

GLEANINGS IN BEE CULTURE.

Books for Bee-Keepers and Others.

Any of these books on which postage is not given will be forwarded by mail, *postpaid*, on receipt of price.

In buying books, as every thing else, we are liable to disappointment, if we make a purchase without seeing the article. Admitting that the bookseller could read all the books he offers, as he has them for sale, it were hardly to be expected he would be the one to mention all the faults, as well as good things about a book. I very much desire that those who favor me with their patronage shall not be disappointed, and therefore I am going to try to prevent it by mentioning all the faults so far as I can, that the purchaser may know what he is getting. In the following list, books that I approve I have marked with a *, those I especially approve, **; those that are not up to times, †; books that contain but little matter for the price, large type, and much space between the lines, ‡; foreign, §. The bee-books are all good.

BIBLES, HYMN-BOOKS, AND OTHER GOOD BOOKS.	
8 Bible, good print, neatly bound.....	25
10 Bunyan's Pilgrim's Progress**.....	35
6 First Steps for Little Feet. By the author of the Story of the Bible. A better book for young children can not be found in the whole round of literature, and at the same time there can hardly be found a more attractive book. Beautifully bound, and fully illustrated. Price 50c. Two copies will be sold for 75 cents. Postage six cents each.	
5 Harmony of the Gospels.....	35
3 John Ploughman's Talks and Pictures, by Rev. C. H. Spurgeon*.....	10
1 Gospel Hymns, consolidated Nos. 1, 2, 3 and 4, words only, cloth, 10c; paper.....	05
2 Same, board covers.....	20
5 Same, words and music, small type, board covers.....	45
10 Same, words and music, board covers.....	75
3 New Testament in pretty flexible covers.....	05
5 New Testament, new version, paper cover.....	10
5 Robinson Crusoe, paper cover.....	20
4 Stepping Heavenward**.....	18
15 Story of the Bible**.....	1 00
A large book of 700 pages, and 274 illustrations. Will be read by almost every child.	
5 The Christian's Secret of a Happy Life**.....	25
8 Same in cloth binding.....	50
1 "The Life of Trust," by Geo. Mulder*.....	1 25
1 Ten Nights in a Bar Room, by T. S. Arthur*.....	03

BOOKS ESPECIALLY FOR BEE-KEEPERS.
As many of the bee-books are sent with other goods by freight or express, incurring no postage, we give prices separately. You will notice, that you can judge of the size of the books very well, by the amount required for postage on each.

Postage. [Price without postage.]	
15 A B C of Bee Culture. Cloth.....	1 10
5 A Year Among the Bees, by C. C. Miller.....	45
14 Bees and Bee-keeping, by Frank Cheshire, England, Vol. I, §.....	2 36
21 Same, Vol. II, §.....	2 79
or, \$5.25 for the two, postpaid.	
15 Bees and Honey, by T. G. Newman.....	1 00
5 Cook's New Manual. Cloth.....	1 35
5 Doolittle on Queen Rearing.....	95
2 Dzierson Theory.....	10
1 Foul Brood: Its management and cure; D. A. Jones.....	09
1 Honey as Food and Medicine.....	5
10 Langstroth on the Hive and Honey-Bee*.....	1 40
15 Langstroth Revised, by Ch. Dadant & Son.....	1 85
10 Quinby's New Bee-Keeping.....	1 40
10 Queen-Rearing, by H. Alley.....	1 00
4 Success in Bee Culture, by James Heddon.....	46
1 The Production of Comb Honey, by W. Z. Hutchinson.....	25

The Apiary; or, Bees, Bee-Hives, and Bee Culture, by Geo. Neighbour & Sons, England. 1 75
British Bee-keeper's Guide - Book, by Thos. Wm. Cowan, Esq., England. 40
3 | Merrybanks and His Neighbor, by A. I. Root 25

MISCELLANEOUS HAND-BOOKS.	
5 A B C of Carp Culture*.....	35
3 A B C of Potato Culture, Terry*.....	35
This is T. B. Terry's first and most masterly work. The book has had an enormous sale, and has been reprinted in foreign languages. When we are thoroughly conversant with friend Terry's system of raising potatoes, we shall be ready to handle almost any farm crop successfully. It has 48 pages and 22 illustrations.	
5 A B C of Strawberry Culture, by T. B. Terry and A. I. Root, 144 pages; 32 illustrations.....	35
5 An Egg-Farm, Stoddard*.....	45
5 Barn Plans and Out-Buildings*.....	1 50
5 Cranberry Culture, White's.....	1 25
5 Canary Birds; paper, 50c; cloth*.....	75
5 Draining for Profit and Health, Warring.....	1 50
5 Eclectic Manual of Phonography; Pitman's System; cloth.....	50

6 Fuller's Practical Forestry*.....	1 40
10 Fuller's Grape Culturist*.....	1 40
10 Farming For Boys*.....	1 15

This is one of Joseph Harris' happiest productions, and it seems to me that it ought to make farm-life fascinating to any boy who has any sort of taste for gardening.

7 | Farm, Gardening, and Seed-Growing**..... 90
This is by Francis Brill, the veteran seed-grower, and is the only book on gardening that I am aware of that tells how market-gardeners and seed-growers raise and harvest their own seeds. It has 166 pages.

10 | Gardening for Pleasure, Henderson*..... 1 40
While "Gardening for Profit" is written with a view of making gardening pay, it touches a good deal on the pleasure part; and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations.

12 | Gardening for Profit, new edition**..... 1 85
This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts.

Gardening for Young and Old, Harris**..... 1 25
This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as to old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.

10 Garden and Farm Topics, Henderson**.....	75
10 Gray's School and Field Book of Botany.....	1 80
5 Gregory on Cabbages; paper*.....	25
5 Gregory on Squashes; paper*.....	25
5 Gregory on Onions; paper*.....	25

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

10 Household Conveniences.....	1 40
2 How to Propagate and Grow Fruit, Green*.....	25
5 How to Make Candy**.....	45
2 Injurious Insects, Cook.....	25

10 | Irrigation for the Farm, Garden, and Orchard, Stewart*..... 1 40

This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks or windmills, to take the place of rain, during our great droughts, is the great problem before us at the present day. The book has 274 pages and 142 cuts.

10 Money in The Garden, Quihn*.....	1 40
3 Maple Sugar and the Sugar-Bush**.....	35

By Prof. A. J. Cook. This was written in the spring of 1887, at my request. As the author has, perhaps, one of the finest sugar-camps in the United States, as well as being an enthusiastic lover of all farm industries, he is better fitted, perhaps, to handle the subject than any other man. The book is written in Prof. Cook's happy style, combining wholesome moral lessons with the latest and best method of managing to get the finest sugar and maple syrup, with the least possible expenditure of cash and labor. Everybody who makes sugar or molasses wants the sugar-book. It has 42 pages and 35 cuts.

1 Poultry for Pleasure and Profit**.....	10
11 Practical Floriculture, Henderson*.....	1 35
5 Peach Culture, Fulton's.....	1 50
10 Profits in Poultry*.....	90
2 Silk and the Silkworm.....	10
10 Small-Fruit Culturist, Fuller*.....	1 40
10 Success in Market-Gardening*.....	90

This is new book by a real, live, enterprising, successful market-gardener who lives in Arlington, a suburb of Boston, Mass. Friend Rawson has been one of the foremost to make irrigation a practical success, and he now irrigates his grounds by means of a windmill and steam-engine whenever a drought threatens to injure the crops. The book has 208 pages, and is nicely illustrated with 110 engravings.

1 The Silo and Ensilage, by Prof. Cook, new edition, fully illustrated.....	20
1 Talks on Manures*.....	1 75

This book, by Joseph Harris is, perhaps, the most comprehensive one we have on the subject, and the whole matter is considered by an able writer. It contains 366 pages.

2 The Carpenter's Steel Square and its Uses; Hodgson; Abridged.....	15
10 The New Agriculture, or the Waters Led Captive.....	75

2 Treatise on the Horse and his Diseases.....	10
3 Winter Care of Horses and Cattle.....	40

This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato-book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in the book. It has 44 pages, and 4 cuts.

8 What to Do, and How to be Happy While Doing It, by A. I. Root.....	50
3 Wood's Common Objects of the Microscope**.....	47

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COMB AND EXTRACTED HONEY

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We shall endeavor to make Quick Sales at the very highest prices, and by making prompt returns we hope to merit your patronage. Advances made when requested. Stencils furnished — also printed instructions for Packing and Shipping, giving valuable information gained by our experience in Shipping Honey by the Ton and in Carload lots.

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REFERENCES.—Bradstreet's and Dunn & Co.'s Commercial Reports, under Wethersfield, Conn., heading, and the numerous Bee-keepers whose Honey we have handled the past 12 years.

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